

Data collection 2018

The Good Growth Plan



Note down unique ID number:

Country code (see country codes in Q2)

Farm type (1=RF and 2=BF)

Unique respondent number

| | | | | | |
|--|--|--|--|--|--|
| | | | | | |
|--|--|--|--|--|--|

Diagram showing the mapping of data fields to the unique ID number structure:

- Country code (2 digits) maps to the first two boxes.
- Farm type (1 digit) maps to the third box.
- Unique respondent number (3 digits) maps to the last three boxes.

FOR REPEATED RESPONDENTS, PLEASE USE EXISTING UNIQUE ID NUMBER

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INSTRUCTIONS FOR INTERVIEWER - VISIT 1

Please use this instruction sheet during the set-up of the before harvest interview ('VISIT 1'). Make sure to check-off all applicable boxes as you go. End by filling out your name and signature at the bottom of the page.

- Check if: REPEATED RESPONDENT
NEW RESPONDENT
Please check off box that applies

| |
|--|
| |
| |

- Note down date of VISIT 1:

| | |
|--|--|
| | |
|--|--|

| | |
|--|--|
| | |
|--|--|

| | | | |
|---|---|---|---|
| 2 | 0 | 1 | 8 |
|---|---|---|---|

Please check off boxes to confirm all was done:

- Hand over Syngenta grower brochure to respondent
➤ Hand over individual grower report to respondent
➤ Use CPP-list during the interview
➤ Use the cluster check list during the interview
➤ Ask respondent to sign grower agreement
➤ Ask respondent to sign photo/video agreement

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| |
| |

- NAME INTERVIEWER:

- SIGNATURE INTERVIEWER:

BACKGROUND INFORMATION

Kynetec is an independent market research agency specialized in agricultural research. For “The Good Growth Plan”, we are currently collecting farm data as part of a global project. This document is your guide for the collection of your farm data. We will already go through some topics, but we will also ask you to fill out some of the data yourself and send the information back to the market research agency.

- After planting (intermediary data transfer): PART I + II + III + IV
 - o Part V has to be left with the farmer
- After harvesting (final data transfer): PART V + VI + VII

In case of questions, please do not hesitate to contact the local help desk (INSERT LOCAL HELPDESK NUMBER).

Before we start data collection, we will guide you through the questionnaire, in order to make all questions clear to you. We will also give some more background information on the Good Growth Plan.

Please note that individual responses will never be reported. All data is analyzed and reported in an aggregated way.

PART I: SCREENING & CROP PROGRAMS

In this first part, we will check the crops and fields for which we will collect data. Thanks in advance for your participation in the 2017 data collection of The Good Growth plan.

1. Please fill out the **unique code**, given by the interviewer:

UNIQUE CODE: **XX X XXX**

Country code (See country codes Q2)

Farm type (1=RF and 2=BF)

Respondent number (Unique respondent number)

ID 2 (IN CASE 2 SEASONS ARE TRACKED FOR THE SAME RESPONDENT; 1=first season; 2=second season)

1. B. Please fill out the **date of the interview**:

Date (Date in DD.MM.YYYY)

1.C1. Have you or someone else in your farm participated in The Good Growth Plan in:

→ Tick all that applies.

→ Multiple response.

| | Growing area A | Growing area B |
|---------|----------------|----------------|
| 1) 2014 | 1 | 1 |
| 2) 2015 | 2 | 2 |
| 3) 2016 | 3 | 3 |
| 4) 2017 | 4 | 4 |

IF 1C1=2017 → INTERVIEWER: share individual grower report

1.C3. Since you have participated in The Good Growth Plan in **2017**, we would like to share with you your individual performance report. This report compares you to **other farmers in the same growing area**, in terms of yield, number of applications, use of crop protection products, and nitrogen use. For your information,

- Yield is expressed in **metric tons per hectare**;
- Number of crop protection product applications per **hectare**;
- Crop protection products in kilogram active ingredient per **hectare**;
- Nitrogen use in **kilogram nitrogen per hectare**.

Having read this document, do you consider this report:

→ Tick what applies.

→ Single response.

| | |
|-----------------------|----|
| Very useful | 4 |
| Rather useful | 3 |
| Not so useful | 2 |
| Not useful at all | 1 |
| Don't know /no answer | 99 |

1.C4. Please explain your answer:

1. F. We are conducting this survey on behalf of Syngenta, a manufacturer of crop protection products, **seeds and seed care**. Would it be okay for you for this company to contact you with follow-up information on The Good Growth Plan?

| | | |
|--|-----|---|
| | Yes | 1 |
| | No | 2 |

SCREENING: Please include screening questions on country/crop/cluster level based on separate screening document.

57. What is the size of each growing area for [TARGET CROP]?

→ Spontaneous. Please write down the size of each growing area.

→ **Single response.**

| | Growing area A | Growing area B |
|----------------------|----------------|----------------|
| Size of growing area |ha |ha |

Check: the sum of the size of growing area A and growing area B cannot be larger than Q5 and/or Q6

56. Please note down the growing area name (e.g. D-block, windmill field ...).

→ Read. The names of both growing areas should be different.

→ **Single response.**

| | Growing area A | Growing area B |
|-------------------|----------------|----------------|
| Field description | | |

IF GROWER IS A REPEATED PARTICIPANT

56A1. Were these areas also included in The Good Growth Plan data collection in [READ], even though the size of this area might have increased or decreased?

→ Read. Please circle if this area was included in the mentioned year.

→ **Multiple response.**

| | Growing area A | Growing area B |
|---------|----------------|----------------|
| 1) 2014 | 1 | 1 |
| 2) 2015 | 2 | 2 |
| 3) 2016 | 3 | 3 |
| 4) 2017 | 4 | 4 |

IF Q56A1=4 (AREA NOT THE SAME AS 2017)

56A2. Please explain why the growing area(s) have changed compared to the previous year?

→ Spontaneous.

→ **Multiple response.**

| | Growing area A | Growing area B |
|--|----------------|----------------|
| I do not cultivate [TARGET CROP] on this area this year due to crop rotation | 1 | 1 |
| I hired another area | 2 | 2 |
| I sold or rented that area of my farm (e.g. to another farmer) | 3 | 3 |
| I left my field fallow | 4 | 4 |
| I switched to a field where I follow a Syngenta program | 5 | 5 |
| I do not cultivate [TARGET CROP] on that area anymore | 6 | 6 |
| Other specify 1: | 96 | 96 |
| Other specify 2: | 97 | 97 |
| Other specify 3: | 98 | 98 |
| Don't know / no answer | 99 | 99 |

57A. Can you please indicate how certain you are of the size indication for each growing area?

→ READ. Check if this was measured by an official agency. If YES, note this official size.

→ *Single response.*

| | Growing area A | Growing area B |
|--|----------------|----------------|
| The size indicated is an estimation | 1 | 1 |
| The size indicated is based on my own measurement | 2 | 2 |
| The size indicated was measured by a third party and is therefore 100% correct | 3 | 3 |
| Other specify: | 96 | 96 |
| Don't know / no answer | 99 | 99 |

IF Q2=17 (COUNTRY = HUNGARY) ONLY ASK IF Q1=2 (BENCHMARK FARM)

397. NEW. We would like to understand if you have received a crop program or any recommendations for each growing area for [TARGET CROP] to implement this season.

→ Read.

→ *Single response.*

| | Growing area A | Growing area B |
|--|----------------|----------------|
| I received a complete crop program (this includes recommendations on seeds, CP, and application times and/or dosages) | 1 | 1 |
| I received some recommendations but not a complete program (for example recommendations on seeds or CP or application times ...) | 2 | 2 |
| I did not receive any kind of crop program and/or recommendations | 90 | 90 |
| 98. Other specify: | | |
| Don't know / no answer | 99 | 99 |

IF Q397_NEW=1 or 2 (received a crop program and/or recommendations)

397. B_NEW. From whom did you receive the crop program or recommendations for each growing area of [TARGET CROP]?

→ Please tick what applies.

→ *Multiple response.*

| | Growing area A | Growing area B |
|---|----------------|----------------|
| Syngenta | 1 | 1 |
| Another manufacturer / representative | 2 | 2 |
| Dealer or store | 3 | 3 |
| Independent advisor | 4 | 4 |
| Cooperative | 5 | 5 |
| Buyer for whom I produce under contract | 6 | 6 |
| 96. Other specify: | | |
| 97. Other specify: | | |
| 98. Other specify: | | |
| Don't know / no answer | 99 | 99 |

DO NOT ASK IF Q2=17 (COUNTRY = HUNGARY)

IF Q397.B_NEW is NOT 1 (did NOT receive a crop program and/or recommendations from Syngenta)

397. D. Would you like to tell us from whom you have received a **crop program or recommendations** for each growing area of [TARGET CROP]?

→ *Spontaneous.*

| Growing area A | Growing area B |
|----------------|----------------|
| | |

IF Q397_NEW=1 or 2 (received a crop program and/or recommendations)

397. F. Could you please give a description of the crop program or recommendations that you received for each growing area of [TARGET CROP]?

→ *Please probe for items such as dose rates, seed treatment, application times, product names, amount of water...*

| Growing area A | Growing area B |
|----------------|----------------|
| | |

IF Q397_NEW=1 or 2 (received a crop program and/or recommendations)

4054. Can you please indicate whether you will ... [READ] follow the recommended **crop program or recommendations this season**?

→ *Read.*

→ *Single response.*

| | Growing area A | Growing area B |
|------------------------|----------------|----------------|
| Completely | 1 | 1 |
| Partially | 2 | 2 |
| Not at all | 3 | 3 |
| Don't know / no answer | 99 | 99 |

IF Q4054=1, 2 OR 3

Q4054.B. Could you please explain your answer?

→ *Please explain and provide as much detail as possible.*

| Growing area A | Growing area B |
|----------------|----------------|
| | |

DO NOT ASK IF Q2=17 (COUNTRY = HUNGARY)

IF Q4054=1 or 2 (crop program or recommendations at least partially applied on selected growing area)

Q4052.B. On what type of field will you apply the program?

→ *Single response.*

| | Growing area A | Growing area B |
|-------------------------------|----------------|----------------|
| Research and Development plot | 1 | 1 |
| Demonstration-plot | 2 | 2 |
| Fully commercial field | 3 | 3 |

4055. Can you please share what your yield objective is on both growing areas for [TARGET CROP] at the beginning of this season?

→ Please write down the yield for each growing area.

| | Growing area A | Growing area B |
|-----------------|--------------------|--------------------|
| Yield objective |metric ton/ha |metric ton/ha |

Q57B_NEW. What is your main way of keeping track of your farm management activities? E.g. application of crop protection products.

→ Single response.

| | |
|--|----|
| I use farm management software | 1 |
| I keep track of my farm records using an Excel-sheet | 2 |
| I keep track of my farm records on paper | 3 |
| I do not keep track of my farm management activities | 90 |
| Other. Specify: ... | 98 |
| Don't know / no answer | 99 |

IF Q57B = code 1 (I use farm management software)

Q57B1. Can you please tell us the name of the farm management software you are using? Please be as specific as possible.

→ Single response.

| |
|--|
| |
|--|

IF Q57B = code 90 (I do not keep track of farm management activities)

Q57C_NEW. In the near future, do you plan to start keeping track of your farm management activities?

→ Single response.

| | |
|--|----|
| Yes, I plan to start using farm management software | 1 |
| Yes, I plan to start keeping track of my farm records using an Excel-sheet | 2 |
| Yes, I plan to start keeping track of my farm records on paper | 3 |
| No, I do not plan to start keeping track of my farm management activities | 90 |
| Other. Specify: ... | 98 |
| Don't know / no answer | 99 |

PART II: CONTACT INFORMATION

Interviewer note: please verify the information on the check form together with the grower and complete ALL of the questions below with most recent information. Please note that it is important that we are able to contact and locate the respondent again next year. We require at least the postal code, city and GPS location.

We will now ask some questions about you, mainly so that we will be able to contact you again next year. These questions are not used to identify you individually, but will always be used in an aggregated way.

19. Surname

→ Please write down the surname in capital letters.

→ *Single response.*

20. First name

→ Please write down the first name in capital letters.

→ *Single response.*

21. Phone number

→ Please write down the phone number, including the country and region codes.

→ *Single response.*

22. E-mail address

→ Please write down the e-mail address in capital letters.

→ *Single response.*

23. Farm address - street

→ Please write down the street name of the location of the farm in capital letters.

→ *Single response.*

24. Farm address - street number

→ Please write down the street number.

→ *Single response.*

25. Farm address - postal code

→ Please write down the postal code of the city in which the farm is located.

→ *Single response.*

26. Farm address - city

→ Please write down the city in which the farm is located.

→ *Single response.*

27. **Please note down the year of birth**

→ Please write down your birth year.

→ *Single response.*

| | |
|--|-------|
| | |
|--|-------|

28. **Gender**

→ Please circle the gender.

| | | |
|--|--------|---|
| | Male | 1 |
| | Female | 2 |

31. **Until what age did you go to school?**

→ Please write down the age until when the grower went to school.

→ *Single response.*

| | |
|--|-----------------|
| | Until..... year |
|--|-----------------|

30. **Are you a full-time or part-time farmer?**

→ Please circle your answer.

→ *Single response.*

| | |
|---|----|
| I am a full-time grower (no other activities generating income apart from farming) | 1 |
| I am a part-time grower (having other activities generating income, like teaching, ...) | 2 |
| Other specify: | 96 |
| Don't know / no answer | 99 |

30. B. **How long have you been engaged in farming activities?**

→ *Single response.*

| | |
|--|-------------|
| | years |
|--|-------------|

33. **Did you receive an agronomical/agricultural education?**

| | | |
|--|-----|---|
| | Yes | 1 |
| | No | 2 |

34. **Are you a member of a producer group, association or cooperative for [TARGET CROP]?**

| | | |
|--|-----|---|
| | Yes | 1 |
| | No | 2 |

DO NOT ASK IF Q2=17 (COUNTRY = HUNGARY)

35. C. Overall, how satisfied would you say you are with your life these days? Please use a scale from 1 to 10, where 1 means “not satisfied at all” and 10 means “very satisfied”.

→ Please write down the satisfaction level on a scale from 1 to 10.

→ Please use code 99 for Don't know.

→ *Single response.*

| |
|----------------------------|
| (scale from 1 to 10) |
|----------------------------|

DO NOT ASK IF Q2=17 (COUNTRY = HUNGARY)

35. D. Please explain your answer.

→ Please explain and provide as much detail as possible.

→ Please probe for activities related to farming if the grower does not mention this.

| |
|--|
| |
|--|

PART III: FARM CHARACTERISTICS

Z. Soil erosion and conservation

We will now speak about soil erosion and conservation. The following questions are about your farm practices in general, without focusing on [TARGET CROP].

37. A. Water erosion signs range from the “splashing” of soil particles over the soil surface and onto crops after heavy rain or irrigation, to the formation of small rills or larger gulleys down hillslopes, traversing down slopes like streams. Do you have signs of soil erosion by water on your farm?

→ Please circle what applies

| | Growing area A | Growing area B |
|-----|----------------|----------------|
| Yes | 1 | 1 |
| No | 2 | 2 |

37. B. Wind erosion signs range from the appearance of dust clouds, especially on dry days, particularly when the soil is ploughed to “sandblasting” effects of fine sand particles hitting leaves and marking them. Do you have signs of soil erosion by wind on your farm?

→ Please circle what applies

| | Growing area A | Growing area B |
|-----|----------------|----------------|
| Yes | 1 | 1 |
| No | 2 | 2 |

- Q7001. Have you changed your tillage practices for [TARGET CROP] in the past 20 years?

→ Please circle what applies

| | Growing area A | Growing area B |
|-----|----------------|----------------|
| Yes | 1 | 1 |
| No | 2 | 2 |

IF Q7001 = 1 (YES)

- Q7002. How did you change your tillage practices on each growing area for [TARGET CROP]?

→ Single response.

| | Growing area A | Growing area B |
|--|----------------|----------------|
| From no tillage to reduced tillage | 1 | 1 |
| From no tillage to conventional tillage | 2 | 2 |
| From reduced tillage to no tillage | 3 | 3 |
| From reduced to conventional tillage | 4 | 4 |
| From conventional tillage to no tillage | 5 | 5 |
| From conventional tillage to reduced tillage | 6 | 6 |
| Don't know/ no answer | 99 | 99 |

IF Q7001 = 1 (YES)

- Q7003. How many years ago did you change your tillage practices on each growing area for [TARGET CROP]?

→ Please note down how many years ago the tillage practices have changed

| | Growing area A | Growing area B |
|---------------------|----------------|----------------|
| How many years ago? | ... years | ... years |

Q7004. Have you started growing a cover crop to manage soil health in the past 20 years on the growing area(s) for [TARGET CROP]?

→ Please circle what applies

| | Growing area A | Growing area B |
|-----|----------------|----------------|
| Yes | 1 | 1 |
| No | 2 | 2 |

(IF Q2 = 13 (France) and Q7004 = 1)

Q7004.B. How do you destroy your cover crop?

→ Spontaneous, please be as specific as possible

| Growing area A | Growing area B |
|----------------|----------------|
| | |

(IF Q2 = 13 (France) and Q7004 = 1)

Q7004. C. Could you tell us how much the cover crop costs per ha?

| | Growing area A | Growing area B |
|------|----------------|----------------|
| Cost | ... €/ha | ... €/ha |

(IF Q2 = 13 (France) and Q7004 = 1)

Q7004. D. Would you like to learn more on how to improve your cover crop management?

→ Please circle what applies

| | Growing area A | Growing area B |
|-----|----------------|----------------|
| Yes | 1 | 1 |
| No | 2 | 2 |

IF Q7004 = 1 (YES)

Q7005. How many years ago did you start growing a cover crop on each growing area for [TARGET CROP]?

→ Please note down how many years ago the grower started growing a cover crop

| | Growing area A | Growing area B |
|---------------------|----------------|----------------|
| How many years ago? | ... years | ... years |

Q7006. Have you stopped growing a cover crop in the past 20 years on the growing area(s) for [TARGET CROP]?

→ Please circle what applies

| | Growing area A | Growing area B |
|-----|----------------|----------------|
| Yes | 1 | 1 |
| No | 2 | 2 |

IF Q7006 = 1 (YES)

Q7007. How many years ago did you stop growing a cover crop on the growing area(s) for [TARGET CROP]?

→ Please note down how many years ago the grower stopped growing a cover crop

| | Growing area A | Growing area B |
|---------------------|----------------|----------------|
| How many years ago? | ... years | ... years |

Q7008. Was any part of your land converted to or from arable land, grassland or forest in the past 20 years on the growing area(s) for [TARGET CROP]?

→ Please circle what applies

| | Growing area A | Growing area B |
|-----|----------------|----------------|
| Yes | 1 | 1 |
| No | 2 | 2 |

IF Q7008 = 1 (YES)

Q7009. How did the use of your land change on the growing area(s) for [TARGET CROP]?

→ Single response

| | Growing area A | Growing area B |
|-------------------------------|----------------|----------------|
| From grassland to arable land | 1 | 1 |
| From grassland to forest | 2 | 2 |
| From forest to grassland | 3 | 3 |
| From forest to arable land | 4 | 4 |
| From arable land to grassland | 5 | 5 |
| From arable land to forest | 6 | 6 |
| 98: Other. Specify ... | | |
| Don't know / no answer | 99 | 99 |

IF Q7008 = 1 (YES)

Q7010. How many years ago did the function of your land change on the growing area(s) for [TARGET CROP]?

→ Please note down how many years ago the function of the grower's land changed

| | Growing area A | Growing area B |
|---------------------|----------------|----------------|
| How many years ago? | ... years | ... years |

G. Description of growing area

For the next topics, we will focus on [TARGET CROP] on the selected growing areas. We are interested in knowing more about the area itself as well as how you grow crops on it.

Interviewer note: please remind the grower of the names and sizes of the areas (!) Q56 and Q57

DO NOT INCLUDE IF Q2=29 (NETHERLANDS) OR Q2=17 (HUNGARY)

65. Do you practice intercropping (growing multiple crops on the same growing area in the same season) on each growing area for [TARGET CROP]?

→ Read.

| | Growing area A | Growing area B |
|-----|----------------|----------------|
| Yes | 1 | 1 |
| No | 2 | 2 |

DO NOT INCLUDE IF Q2=29 (NETHERLANDS) OR Q2=17 (HUNGARY)

IF Q65=1 (intercropping)

66. Which crops do you intercrop on each growing area with [TARGET CROP]?

→ Please circle all crops you intercrop. Also look at code list on next page (more crops included).

→ Interviewer instruction: Also include [TARGET CROP].

→ Multiple response.

| | Growing area A | Growing area B |
|--------------|----------------|----------------|
| Apples | 1 | 1 |
| Banana | 2 | 2 |
| Barley | 3 | 3 |
| Cauliflower | 4 | 4 |
| Cocoa | 5 | 5 |
| Coffee | 6 | 6 |
| Corn | 7 | 7 |
| Cotton | 8 | 8 |
| Grape | 9 | 9 |
| Oilseed rape | 10 | 10 |
| Pear | 11 | 11 |
| Pepper | 12 | 12 |
| Potato | 13 | 13 |
| Rice | 14 | 14 |
| Soybean | 15 | 15 |
| Stone fruit | 16 | 16 |
| Sugarcane | 17 | 17 |
| Sunflower | 18 | 18 |
| Tomato | 19 | 19 |
| Watermelon | 20 | 20 |
| Wheat | 21 | 21 |

OTHER CROPS

| | | | |
|---|----|-----------------------------------|----|
| Alfalfa/lucerna | 22 | Leek | 57 |
| Asparagus | 23 | Lettuce | 58 |
| Avocado | 24 | Longan | 59 |
| Beets/roots (turnip, yam ...) | 25 | Managu (African nighshade) | 60 |
| Berries | 26 | Mango | 61 |
| Bitter melon | 27 | Millet | 62 |
| Broccoli | 28 | Mushroom | 63 |
| Brussels sprout | 29 | Nuts | 64 |
| Cabbage | 30 | Oats | 65 |
| Carrot | 31 | Olive | 66 |
| Cassava | 32 | Onion | 67 |
| Cauliflower (in general) | 33 | Other melons | 68 |
| Celeriac | 34 | Other peppers | 69 |
| Celery | 35 | Other potatoes | 70 |
| Cherry | 36 | Other rice | 71 |
| Chicory | 37 | Other wheat | 72 |
| Citrusfruit (orange, lemon) | 38 | Palm oil | 73 |
| Coconut (palm tree) | 39 | Papaya | 74 |
| Cover crop | 40 | Passion fruit | 75 |
| Cucumber | 41 | Peach | 76 |
| Dasheen | 42 | Pineapple | 77 |
| Eggplant | 43 | Pomme granate | 78 |
| Eucalyptus | 44 | Prune | 79 |
| Fennel | 45 | Pulses (lentils, beans, peas ...) | 80 |
| Flax | 46 | Pumpkin/squash | 81 |
| Flowers | 47 | Quinoa | 82 |
| Forage | 48 | Radish | 83 |
| Garlic | 49 | Rubber | 84 |
| Grass | 50 | Seeds (chia, sesame ...) | 85 |
| Grassland (pasture/artificial/temporary) | 51 | Spelt | 86 |
| Guava | 52 | Spinach | 87 |
| Herbs (coriander, cinnamon ...) | 53 | Strawberry | 88 |
| Jute | 54 | Sugar beet | 89 |
| Kale | 55 | Zucchini | 90 |
| Lady finger (Okra) | 56 | Sorghum | 91 |
| Other. Specify 1: | | | 96 |
| Other. Specify 2: | | | 97 |
| Other. Specify 3: | | | 98 |
| Don't know / no answer | | | 99 |

IF Q4=3; 4; 7; 8; 10; 12; 13; 14; 15; 17; 18; 19; 20; 21 (question only applies to FIELD CROPS)

60. Do you rotate crops on each growing area for [TARGET CROP]?

→ Please circle your answer.

| | Growing area A | Growing area B |
|-----|----------------|----------------|
| Yes | 1 | 1 |
| No | 2 | 2 |

IF Q4=3; 4; 7; 8; 10; 12; 13; 14; 15; 17; 18; 19; 20; 21 (question only applies to FIELD CROPS)

IF Q2=17 (HUNGARY) only include following codes: 3, 7, 10, 13, 15, 18, 21

IF Q60=1 (crop rotation)

61. What crops are you cultivating in rotation on each growing area for [TARGET CROP]?

→ Please circle all that apply for each growing area.

Note down other crops if not in list. Use same code list as Q66.

→ Multiple response.

| | Growing area A | Growing area B |
|-------------------------------------|----------------|----------------|
| Barley | 3 | 3 |
| Cauliflower for processing industry | 4 | 4 |
| Corn | 7 | 7 |
| Cotton | 8 | 8 |
| Oilseed rape | 10 | 10 |
| Pepper | 12 | 12 |
| Potato | 13 | 13 |
| Rice | 14 | 14 |
| Soybean | 15 | 15 |
| Sugarcane | 17 | 17 |
| Sunflower | 18 | 18 |
| Tomato | 19 | 19 |
| Watermelon | 20 | 20 |
| Wheat | 21 | 21 |
| 96. Other. Specify 1: | | |
| 97. Other. Specify 2: | | |
| 98. Other. Specify 3: | | |
| Don't know / no answer | 99 | 99 |

67. What is the soil type of each growing area for [TARGET CROP]?

→ Spontaneous Note down other soil type if not in list. *Single response.*

| | Growing area A | Growing area B |
|------------------------|----------------|----------------|
| Clay soil | 1 | 1 |
| Silty clay soil | 2 | 2 |
| Silty clay loam soil | 3 | 3 |
| Clay loam soil | 4 | 4 |
| Loam soil | 5 | 5 |
| Silt loam soil | 6 | 6 |
| Silt soil | 7 | 7 |
| Sandy clay soil | 8 | 8 |
| Sandy clay loam soil | 9 | 9 |
| Sandy loam soil | 10 | 10 |
| Loamy sand soil | 11 | 11 |
| Sandy soil | 12 | 12 |
| 98. Other. Specify: | | |
| Don't know / no answer | 99 | 99 |

67. B. What type of texture is your soil on each growing area for [TARGET CROP] this season?

→ *Single response*

| | Growing area A | Growing area B |
|--|----------------|----------------|
| Heavy - this includes clayey soils that are hard to plough, especially if dry | 1 | 1 |
| Medium - this includes loamy soils that are moderately hard to plough | 2 | 2 |
| Light - this includes sandy soils that are easy to pull a plough through, even when dry | 3 | 3 |
| Don't know / no answer | 99 | 99 |

Q7011. How moist would rate your soil on each growing area for [TARGET CROP] this season?

→ *Single response*

| | Growing area A | Growing area B |
|-------|----------------|----------------|
| Moist | 1 | 1 |
| Dry | 2 | 2 |

Q7012. How would you rate the drainage of water through the soil on each growing area for [TARGET CROP] this season?

→ *Single response*

| | Growing area A | Growing area B |
|---------------|----------------|----------------|
| Good drainage | 1 | 1 |
| Poor drainage | 2 | 2 |

F. Training on crop cultivation, safety measures and contact with Syngenta

In this topic, we will first ask you about training on crop cultivation and safety measures (for example, safety practices related to the usage of crop protection products). Afterwards, we will ask some questions concerning your relationship and contacts with Syngenta.

IF Q2=20 (Country = Italy) OR Q2=17 (Country=Hungary) DO NOT ASK

55. E1. Have you followed a training or farmers meeting on crop growing and/or agricultural practices in the past 2 years?

| | |
|-----|---|
| Yes | 1 |
| No | 2 |

IF Q2=20 (Country = Italy) OR Q2=17 (Country=Hungary) DO NOT ASK

IF Q55E1=1 (Yes)

Q5500. During the training/farmers meeting, did they talk at least 15 minutes about safe-use practices related to crop protection products, fertilizers etc... ?

| | |
|-----|---|
| Yes | 1 |
| No | 2 |

IF Q2=20 (Country = Italy) OR Q2=17 (Country=Hungary) DO NOT ASK

IF Q55E1=1 (Yes)

55. E2. Who organized this training?

→ Spontaneous

→ Multiple response

| | |
|---|----|
| Syngenta representative | 1 |
| Internet | 2 |
| Extension officer | 3 |
| Cooperative | 4 |
| Agronomist/advisor | 5 |
| Supplier | 6 |
| Governmental organization (e.g. Ministry) | 7 |
| Other specify 1: | 96 |
| Other specify 2: | 97 |
| Other specify 3: | 98 |
| Don't know / no answer | 99 |

IF Q2 = 13 (Country = France) and Q55E1 = 1

Q55. E13. How many times did you attend a technical day with a safe use training during the past year?

| |
|-----------|
| ... times |
|-----------|

IF Q2=22 (Japan) → only ask RF

DO NOT ASK IF Q2 = 13 (Country = France) OR Q2=17 (Country=Hungary)

Q5501. Have you been contacted by a Syngenta representative during the past season?

| | |
|-----|---|
| Yes | 1 |
| No | 2 |

If Q5501 yes

DO NOT ASK IF Q2 = 13 (Country = France) OR Q2=17 (Country=Hungary)

Q5502. Can you please describe how the Syngenta representative contacted you?

→ Multiple response

| | |
|------------------------|----|
| Demonstration day | 1 |
| They visited my farm | 2 |
| Received a brochure | 3 |
| Phone call | 4 |
| E-mail communication | 5 |
| Other specify 1: | 96 |
| Other specify 2: | 97 |
| Other specify 3: | 98 |
| Don't know / no answer | 99 |

If Q5501=yes

DO NOT ASK IF Q2 = 13 (Country = France) OR Q2=17 (Country=Hungary)

Q5503. Would you say that the contact with the Syngenta representative was ... [READ SCALE]?

→ Single response

| | |
|------------------------|----|
| Not useful at all | 1 |
| Not very useful | 2 |
| Rather useful | 4 |
| Very useful | 5 |
| Don't know / no answer | 99 |

DO NOT ASK IF Q2=17 (Country=Hungary)

4041. A. Do you feel the need to follow training on crop cultivation in the near future (during the season of your [TARGET CROP])?

| | |
|-----|---|
| Yes | 1 |
| No | 2 |

DO NOT ASK IF Q2=17 (Country=Hungary)

IF Q4041. A. =1 (need to follow training)

4041. B. What would you like to learn?

→ Spontaneous. Please be as specific as possible.

ALL OF THE FOLLOWING QUESTIONS ONLY APPLY FOR NETHERLANDS (Q2=29)

54. **Where** do you deposit the **rest water** after spraying?

→ Spontaneous.

→ Multiple response.

| | |
|---|----|
| Citerne (phytobac, heliosecc, sentinel, biofilter, ...) | 1 |
| In fields | 2 |
| In rivers, streams, drain or via the ditch | 3 |
| I don't have any rest water after spraying | 90 |
| Other specify 1: | 96 |
| Other specify 2: | 97 |
| Other specify 3: | 98 |
| Don't know / no answer | 99 |

IF Q54=1 (CITERNE)

54 A. If you used a **citerne** to deposit the rest water after spraying, how many liters of rest water did you cleanse in 2016?

→ Please fill in the number of liters you cleansed using a citerne.

| | |
|--------------------------------|------------|
| Number of liters of rest water | ... liters |
|--------------------------------|------------|

55. A. Where do you clean your spraying equipment?

→ Multiple response

→ Spontaneous

| | |
|-------------------------------------|----|
| On farm | 1 |
| On field | 2 |
| I don't clean my spraying equipment | 90 |
| Other specify 1: | 96 |
| Other specify 2: | 97 |
| Other specify 3: | 98 |
| Don't know / no answer | 99 |

IF Q55A=1 or 2 or 96 or 97 or 98 (cleaned spraying equipment)

55 B. **Where** do you dispose of the **cleaning water** used for cleaning the equipment?

→ Spontaneous.

→ Multiple response

| | |
|---|----|
| On field | 1 |
| Citerne (phytobac, heliosecc, sentinel, biofilter, ...) | 2 |
| On an unpaved surface | 3 |
| On a paved surface (drain / dike) | 4 |
| Other specify 1: | 96 |
| Other specify 2: | 97 |
| Other specify 3: | 98 |
| Don't know / no answer | 99 |

55 B1. Do you clean empty product packages?

| | |
|-----|---|
| Yes | 1 |
| No | 2 |

IF Q55B1=1 (cleans empty product packages)

55 B2. Where do you dispose the cleaning water used for cleaning the empty packages?

→ Spontaneous

→ Multiple response

| | |
|---|----|
| On field | 1 |
| Citerne (phytobac, heliosecc, sentinel, biofilter, ...) | 2 |
| On an unpaved surface | 3 |
| On a paved surface (drain / dike) | 4 |
| Other specify 1: | 96 |
| Other specify 2: | 97 |
| Other specify 3: | 98 |
| Don't know / no answer | 99 |

55 C. Do you store the sprayer protected from rain?

| | |
|-----|---|
| Yes | 1 |
| No | 2 |

55 D. Do you use drift-reducing nozzles on your sprayer?

| | |
|-----|---|
| Yes | 1 |
| No | 2 |

IF Q55D=1 (uses drift reducing nozzles)

55 D1. What is the percentage of drift reduction for these nozzles?

→ Single response.

| | |
|------------------------|----|
| 50% drift reduction | 1 |
| 75% drift reduction | 2 |
| 90% drift reduction | 4 |
| Other. Specify: | 98 |
| Don't know / no answer | 99 |

55 D2. Do you use a tank with clean water on your sprayer?

| | |
|-----|---|
| Yes | 1 |
| No | 2 |

PART IV: FARMING PRACTICES - BEFORE HARVEST

We will now speak about your farming practices, including the things you do to the field before harvest, the advice you follow and programs you are involved in.

A. Planting and fruit development - field crops

71. Could you please note down the variety that has been used for each growing area for [TARGET CROP]?

- Please note down the main variety that has been used for each growing area.
→ *Single response.*

| | Growing area A | Growing area B |
|---------|----------------|----------------|
| Variety | ... | ... |

72. When did the first field preparation start for each growing area for [TARGET CROP]?

- Please write down the date of the first field preparation for each growing area.
→ Interviewer note: First field preparation is the very first date that an action (e.g. fertilizer application) is taken on field. Therefore, please compare this date with fertilizer and crop protection product application dates. First field preparation should also take place before sowing.

| | Growing area A | Growing area B |
|------------------------------|-----------------------------|-----------------------------|
| Date first field preparation | --.---.---- (DD.MM.YYYY) | --.---.---- (DD.MM.YYYY) |

Q72b. Can you please explain what you consider the first field preparation activity?

- *Spontaneous. For example: ploughing, fertilizing ...*

| Growing area A | Growing area B |
|----------------|----------------|
| | |

73. What is the amount of seeds in kilogram that has been sown per hectare for each growing area for [TARGET CROP]?

- Please note down the total amount of seeds in kilogram per hectare for each growing area.

| | Growing area A | Growing area B |
|--------------------------------------|----------------|----------------|
| Seed density in kilogram per hectare |kg/ha |kg/ha |

IFQ73=-1 (don't know the amount of seeds in kg/ha)

IF Q2=17 (Country = Hungary) => ADD INTERVIEWER NOTE: SEED DENSITY IS USUALLY MENTIONED IN SEEDS / HECTARE

73.A1. What is the amount of seeds that has been sown for each of the growing areas?

- Please write down the amount of seeds used including the measurement unit used.

| | Growing area A | Growing area B |
|-----------------|----------------|----------------|
| Amount of seeds | | |

Q7014. How moist was your soil at the time of sowing on each growing area for [TARGET CROP] this season?

→ Please circle your answer

| | Growing area A | Growing area B |
|-------|----------------|----------------|
| Moist | 1 | 1 |
| Dry | 2 | 2 |
| Wet | 3 | 3 |

IF Q7014=2 & IF Q4=14 (RICE)

Q7014. A. Do you cultivate rice in a drought prone environment?

| | Growing area A | Growing area B |
|-----|----------------|----------------|
| Yes | 1 | 1 |
| No | 2 | 2 |

IF Q4=14 (RICE)

116. What production system (ways of planting rice) is used on each growing area for rice? Was it ... [READ]?

→ Single response

→ Please tick what applies for each growing area. Only one answer possible per growing area. Note down other if not in list.

| | Growing area A | Growing area B |
|--|----------------|----------------|
| Transplanted (TR) | 1 | 1 |
| Direct-seeded (DS) | 2 | 2 |
| Direct-seeded, wet-sown (DSWS) | 3 | 3 |
| Direct-seeded, dry-sown (DSDS) | 4 | 4 |
| System of Rice Intensification (SRI) | 5 | 5 |
| Deepwater rice (rice grown in flooded conditions with water more than 50 cm (20 in) deep for at least a month) | 6 | 6 |
| 98. Other. Specify | | |
| Don't know / no answer | 99 | 99 |

IF Q4=14 (RICE)

116. A. Did you enrich your soil organically?

| | Growing area A | Growing area B |
|-----|----------------|----------------|
| Yes | 1 | 1 |
| No | 2 | 2 |

IF Q116. A. =1 (YES) & IF Q4=14 (RICE)

116. B. How did you enrich your soil organically?

→ **Multiple response**

→ Please tick what applies for each growing area.

| | Growing area A | Growing area B |
|---|----------------|----------------|
| Ploughed residue into the soil more than 30 days before sowing/planting | 1 | 1 |
| Ploughed residue into the soil less than 30 days before sowing/planting | 2 | 2 |
| Compost | 3 | 3 |
| Animal manure | 4 | 4 |
| Green manure | 5 | 5 |
| 98. Other. Specify | | |
| Don't know / no answer | 99 | 99 |

IF Q4=14 (RICE)

116. C. Was your growing area flooded BEFORE sowing/planting?

| | Growing area A | Growing area B |
|-----|----------------|----------------|
| Yes | 1 | 1 |
| No | 2 | 2 |

IF Q116. C.=2 (NO) & IF Q4=14 (RICE)

116. D. For how long was your growing area not flooded before sowing/planting?

| | Growing area A | Growing area B |
|--------------------|----------------|----------------|
| Less than 6 months | 1 | 1 |
| More than 6 months | 2 | 2 |

IF Q4=14 (RICE)

116. E. Was your growing area flooded AFTER sowing/planting?

| | Growing area A | Growing area B |
|-----|----------------|----------------|
| Yes | 1 | 1 |
| No | 2 | 2 |

IF Q 116. E.=1 (YES) & IF Q4=14 (RICE)

116. F. How many days was your growing area flooded after sowing/planting?

→ Please write down the number of days.

| | Growing area A | Growing area B |
|---|----------------|----------------|
| Number of days area was flooded after sowing/planting | ...days | ...days |

IF Q 116. E.=1 (YES) & IF Q4=14 (RICE)

116. G. How did you flood your growing area after sowing/planting?

→ Single response.

→ Please tick what applies for each growing area. Note down other if not in list.

Interviewer note: aeration is the processing of exposing rice to air in order to equalize/reduce the temperature difference between the rice and outside air

| | Growing area A | Growing area B |
|--|----------------|----------------|
| Continuous flooding | 1 | 1 |
| No continuous flooding - one aeration period | 2 | 2 |
| No continuous flooding - multiple aeration periods | 3 | 3 |
| 98. Other. Specify: | ... | ... |
| Don't know / no answer | 99 | 99 |

IF Q4=13 (POTATO) & NOT IF Q2=22 (JAPAN)

123. B. Which type of potatoes do you cultivate on each growing area for potato?

→ READ, single response.

→ Please note down the type of potato that has been cultivated for each growing area.

| | Growing area A | Growing area B |
|--------------------------|----------------|----------------|
| Potatoes for fresh use | 1 | 1 |
| Potatoes for process use | 2 | 2 |
| Starch potatoes | 3 | 3 |
| Seed potatoes | 4 | 4 |
| 98. Other. Specify: | ... | ... |
| Don't know / no answer | 99 | 99 |

IF Q2=22 (JAPAN)

123. C. Which type of potatoes do you cultivate on each growing area for potato?

→ READ, single response.

→ Please note down the type of potato that has been cultivated for each growing area.

→ Interviewer note: in cluster 2, growers should select either starch potatoes or chips potatoes

| | Growing area A | Growing area B |
|--------------------------|----------------|----------------|
| Potatoes for fresh use | 1 | 1 |
| Potatoes for process use | 2 | 2 |
| Starch potatoes | 3 | 3 |
| Seed potatoes | 4 | 4 |
| Chips potatoes | 5 | 5 |
| 98. Other. Specify: | ... | ... |
| Don't know / no answer | 99 | 99 |

→ Please indicate what applies. Please write down other if needed.

| | Growing area A | Growing area B |
|------------------------|----------------|----------------|
| Open field | 1 | 1 |
| Active Greenhouse | 2 | 2 |
| Passive Greenhouse | 3 | 3 |
| 98. Other. Specify 1: | ... | ... |
| Don't know / no answer | 99 | 99 |

→ Please note down the number of plants that has been transplanted per m^2 for each growing area.

| | Growing area A | Growing area B |
|----------------------|--------------------------------------|--|
| Plant density |number of plants/m ² |number of plants / m ² |

→ Please write down the date of sowing/planting for each growing area.

| | Growing area A | Growing area B |
|----------------------|--------------------------------|--------------------------------|
| Sowing/planting date | -- . -- . ---- (DD.MM.YYYY) | -- . -- . ---- (DD.MM.YYYY) |

Q7400. Have you sown / planted [TARGET CROP] in the same period as last year?

| | Growing area A | Growing area B |
|-----|----------------|----------------|
| Yes | 1 | 1 |
| No | 2 | 2 |

→ Spontaneous.

| spontaneous: | |
|----------------|----------------|
| Growing area A | Growing area B |
| | |

ONLY IF Q2=37 and Q4=18 (Spain; sunflower)

74. B. Have you planted a sunflower variety with the Clearfield Production System?

| | Growing area A | Growing area B |
|-----|----------------|----------------|
| Yes | 1 | 1 |
| No | 2 | 2 |

ONLY IF Q2=37 and Q4=18 and Q74.B = 1 (Spain; sunflower)

74. C. When did you plant the sunflower seeds with the Clearfield Production System trait for each growing area for [TARGET CROP]?

→ Please write down the date of sowing/planting for each growing area.

| | Growing area A | Growing area B |
|--------------------------|------------------------------|------------------------------|
| Clearfield planting date | --. --. ---- (DD.MM.YYYY) | --. --. ---- (DD.MM.YYYY) |

ONLY if RF AND Q2=13 (France) AND Q4=10 or 18 (OSR or sunflower)

234. C. Did you sow flowers on each growing area for [TARGET CROP] this season, as part of the recommendations you received from Syngenta?

| | Growing area A | Growing area B |
|-----|----------------|----------------|
| Yes | 1 | 1 |
| No | 2 | 2 |

ONLY IF Q2=35 and Q4=18 (Russia; sunflower)

2521. And what is the country of origin of the sunflower seeds variety for each growing area?

→ Please note down the country of origin of the sunflower seeds variety for each growing area.

→ Single response.

| GROWING AREA A | | | | GROWING AREA B | | | |
|------------------------|----|---------|----|------------------------|----|---------|----|
| France | 13 | Ukraine | 46 | France | 13 | Ukraine | 40 |
| Hungary | 17 | Kenya | 24 | Hungary | 17 | USA | 41 |
| Russia | 35 | | | Russia | 35 | | |
| Other. Specify: | | | 98 | Other. Specify: | | | 98 |
| Don't know / no answer | | | 99 | Don't know / no answer | | | 99 |

ONLY IF Q2=35 and Q4=18 (Russia; sunflower)

2523. A. What is the weight of thousand seeds that have been sown for each growing area for sunflower?

→ Please note down the weight of thousand seeds for each growing area.

| | Growing area A | Growing area B |
|--------------|------------------------------------|------------------------------------|
| Seed density |weight of 1000 seeds in kg |weight of 1000 seeds in kg |

74. D. From which source did you obtain your main seed variety for each growing area for [TARGET CROP]?

→ Spontaneous. *Single response.*

| | Growing area A | Growing area B |
|--|----------------|----------------|
| I saved the seeds myself | 1 | 1 |
| Local market | 2 | 2 |
| Buyer or contractor | 3 | 3 |
| Retailer, dealer or store | 4 | 4 |
| Cooperative or farming association | 5 | 5 |
| My social network (family, friends) | 6 | 6 |
| Other farmer | 7 | 7 |
| Governmental organization (e.g. seed aid initiative) | 8 | 8 |
| Nursery | 9 | 9 |
| 98. Other. Specify: | ... | ... |
| Don't know / no answer | 99 | 99 |

74. E. Can you please tell us what kind of pollination applies to your main seed variety for each growing area for [TARGET CROP]?

→ Please tick what applies. *Single response.*

| | Growing area A | Growing area B |
|---|----------------|----------------|
| Open Pollinated Variety = OPV (this is when pollination of the seed happens via insects, birds, wind transmission ... = natural mechanism) | 1 | 1 |
| Hybrid variety (controlled method of pollination, in which the pollen of two different seed varieties have been crossed = human mechanism) | 2 | 2 |
| Genetically modified variety (DNA changes have been introduced = genetic intervention) | 3 | 3 |
| 98. Other. Specify: | ... | ... |
| Don't know / no answer | 99 | 99 |

IF Q74.E=1 (Open Pollinated Variety)

74. E1 You mentioned that you select Open Pollinated Variety for [TARGET CROP]. Can you please specify if this is a local or improved Open Pollinated Variety?

| | Growing area A | Growing area B |
|--|----------------|----------------|
| Local Open Pollinated Variety = OPV (this is when pollination of the seed happens via insects, birds, wind transmission ... = natural mechanism) This is a traditional variety - not developed & optimized by plant breeder | 1 | 1 |
| Improved Open Pollinated Variety = OPV this is an improved variety that has been developed by a plant breeder and optimized in its traits | 2 | 2 |
| Don't know / no answer | 99 | 99 |

74. F. Is your main seed variety for each growing area for [TARGET CROP] a certified seed variety? 'Certified' means that the variety meets certification standards on e.g. purity or germination.

| | Growing area A | Growing area B |
|------------------------|----------------|----------------|
| Yes | 1 | 1 |
| No | 2 | 2 |
| Don't know / no answer | 99 | 99 |

74. G. According to you, what are the three most important characteristics when selecting your main seed variety for each growing area for [TARGET CROP]?

→ *Spontaneous.*

→ *Multiple response (3 responses needed).*

| | Growing area A | Growing area B |
|--|----------------|----------------|
| Availability of the seed | 1 | 1 |
| Drought tolerance | 2 | 2 |
| High yielding | 3 | 3 |
| Specific quality attributes (e.g. taste, color) | 4 | 4 |
| Early maturity | 5 | 5 |
| Herbicide resistance | 6 | 6 |
| Tolerance against insects, pest and/or diseases | 7 | 7 |
| Low price | 8 | 8 |
| Expected return on investment | 9 | 9 |
| Seed quality (e.g. cleanliness, purity, germination) | 10 | 10 |
| Complementary services (e.g. advice from agronomist) | 11 | 11 |
| Don't know / no answer | 99 | 99 |

382. Please describe per growing area if you performed the activity and how you performed it for [TARGET CROP].

Indicate if you have done every activity or not. If YES: please continue with all other questions related to this activity below.

- A. How many times did you perform the activity? One performance equals the treatment of the entire area.
- B. How many man-days did it take to perform the activity? One man-day equals the amount of labor of one single worker during a day. Please consider all the performances/applications for the activity.
- C. Did you use any machinery to perform the activity? Machines rely on non-human energy sources (for example fuel or petrol) If YES; please continue with all the other questions.
 - Machines rely on non-human energy sources: for example: fuel or petrol
- D. Please tell us which type of machinery you used to complete the activity
 - Indicate the type of machinery that you used (for example: chisel plough, tractor, cultivator ...). We are NOT interested in the brand or make.
- E. Could you tell us which type of fuel the machine consumes?
 - For example: diesel or petrol

| Growing area A | | | | | | |
|---|--|--|--|---|--|--|
| | Did you perform the activity? 1=Yes 2=No | A. How many times did you perform this activity? | B. How many man-days did it take to perform [INSERT ACTIVITY]. | C. Did you use any machinery for [INSERT ACTIVITY] 1= Yes 2= No | If yes on Q382_C D. Type of machinery used | If yes on Q382_C E. Type of fuel used 1. Diesel 2. Petrol 99. Do not know |
| 1. Clearing Removing remains of the crop, e.g. stumps, stones or other obstacles. | | | | | | |
| 2. Ploughing Breaking and turning over the earth with a plow. | | | | | | |
| 3. Digging Loosening the earth or digging a hole. | | | | | | |
| 4. Ridging Plowing alternate strips by throwing the furrow onto the unplowed strip. | | | | | | |
| 5. Ripping Breaking up the compacted soil layers. | | | | | | |
| 6. Land levelling Levelling the field to improve e.g. irrigation or water usage. | | | | | | |
| 9. Mulching Covering the soil to improve crop growth, e.g. to make soil more moist. | | | | | | |
| 10. Sowing or planting | | | | | | |
| IF Q2=22 10b. In-furrow activities | | | | | | |

| | Growing area B | | | | | |
|---|--|--|---|---|---|---|
| | 382_1: Did you perform the activity? 1=Yes 2=No | A. How many times did you perform this activity? | B. How many man-days did it take to perform [INSERT ACTIVITY] | C. Did you use any machinery for [INSERT ACTIVITY] 1= Yes 2= No | If yes on Q382_C D. Type of machinery used | If yes on Q382_C E. Type of fuel used 1. Diesel 2. Petrol 99. Do not know |
| 1. Clearing Removing remains of the crop, e.g. stumps, stones or other obstacles. | | | | | | |
| 2. Ploughing Breaking and turning over the earth with a plow. | | | | | | |
| 3. Digging Loosening the earth or digging a hole. | | | | | | |
| 4. Ridging Plowing alternate strips by throwing the furrow onto the unplowed strip. | | | | | | |
| 5. Ripping Breaking up the compacted soil layers. | | | | | | |
| 6. Land levelling Levelling the field to improve e.g. irrigation or water usage. | | | | | | |
| 9. Mulching Covering the soil to improve crop growth, e.g. to make soil more moist. | | | | | | |
| 10. Sowing or planting | | | | | | |
| IF Q2=22 10b. In-furrow activities | | | | | | |

| |
|---|
| B. Planting and fruit development - tree crops |
|---|

We will now focus on the practices you plan to do including information on the trees themselves, labor hours and machinery used.

196. Could you please note down the variety that has been used for each growing area for [TARGET CROP]?

→ Please note down the main variety that has been used for each growing area.

| | Growing area A | Growing area B |
|---------|----------------|----------------|
| Variety | ... | ... |

197. What is the year of planting for each growing area for [TARGET CROP]?

→ Please note down the year of planting for each growing area.

→ Interviewer note: If the growing area remained the same, please use the check form to verify if the year of planting corresponds with the planting year mentioned in 2016.

| | Growing area A | Growing area B |
|------------------|----------------|----------------|
| Year of planting | | |

198. B. What is the total number of trees per hectare for each growing area for [TARGET CROP]?

→ Please note down the total number of trees per hectare for each growing area.

→ Interviewer note: If the growing area remained the same, please use the check form to verify if the average number of trees corresponds with the planting year mentioned in 2015.

| | Growing area A | Growing area B |
|--------------|----------------|----------------|
| Tree density |trees/ha |trees/ha |

183. Do you prune each growing area for [TARGET CROP]?

| | Growing area A | Growing area B |
|-----|----------------|----------------|
| Yes | 1 | 1 |
| No | 2 | 2 |

IF Q183=1 (YES) and IF Q4≠1; 11 (NOT APPLE OR PEAR)

4062. When did the pruning period of the trees start for each growing area for [TARGET CROP]?

→ Please write down the period of pruning for each growing area.

| | Growing area A | | Growing area B | |
|----------------|----------------|----------------------------------|----------------|----------------------------------|
| Pruning period | A | From __.__.____ (DD.MM.YYYY) | A | From __.__.____ (DD.MM.YYYY) |
| | B | Until __.__.____ (DD.MM.YYYY) | B | Until __.__.____ (DD.MM.YYYY) |

184. When did the winter pruning of the trees start for each growing area for [TARGET CROP]?

| | | Growing area A | | Growing area B | |
|----------------|---|------------------------------------|---|------------------------------------|--|
| Pruning period | A | From __. __. ____ (DD.MM.YYYY) | A | From __. __. ____ (DD.MM.YYYY) | |
| | B | Until __. __. ____ (DD.MM.YYYY) | B | Until __. __. ____ (DD.MM.YYYY) | |

| | Growing area A | Growing area B |
|----------------|--------------------------------|--------------------------------|
| Flowering date | -- . -- . ---- (DD.MM.YYYY) | -- . -- . ---- (DD.MM.YYYY) |

382. Please describe per growing area if you performed the activity and how you performed it for [TARGET CROP].

Indicate if you have done this activity or not. If YES: please continue with all other questions related to this activity below.

- A. How many times did you perform the activity? One performance equals the treatment of the entire area.
- B. How many man-days did it take to perform the activity? One man-day equals the amount of labor of one single worker during a day. Please consider all the performances/applications for the activity.
- C. Did you use any machinery to perform the activity? Machines rely on non-human energy sources (for example fuel or petrol) If YES; please continue with all the other questions.
 - Machines rely on non-human energy sources: for example: fuel or petrol
- D. Please tell us which type of machinery you used to complete the activity
 - Indicate the type of machinery that you used (for example: chisel plough, tractor, cultivator ...). We are NOT interested in the brand or make.
- E. Could you tell us which type of fuel the machine consumes?
 - For example: diesel or petrol

| Growing area A | | | | | | |
|---|---|--|---|---|--|--|
| | 382_1: Did you perform the activity? 1=Yes 2=No | A. How many times did you perform this activity? | B. How many man-days did it take to perform [INSERT ACTIVITY] | C. Did you use any machinery for [INSERT ACTIVITY] 1= Yes 2= No | If yes on Q382_C D. Type of machinery used | If yes on Q382_C E. Type of fuel used 1. Diesel 2. Petrol 99. Do not know |
| 1. Clearing Removing remains of the crop, e.g. stumps, stones or other obstacles. | | | | | | |
| 9. Mulching Covering the soil to improve crop growth, e.g. to make soil more moist. | | | | | | |
| 14. Pruning To cut parts of branches to improve shape or growth. | | | | | | |
| 21. Top/side grafting Replacing part of a branch with another part (e.g. from a different variety). | | | | | | |
| 96. Other specify 1: | | | | | | |
| 97. Other specify 1: | | | | | | |
| 98. Other specify 1: | | | | | | |

| | Growing area B | | | | | |
|---|---|--|---|---|--|--|
| | 382_1: Did you perform the activity? 1=Yes 2=No | A. How many times did you perform this activity? | B. How many man-days did it take to perform [INSERT ACTIVITY] | C. Did you use any machinery for [INSERT ACTIVITY] 1= Yes 2= No | If yes on Q382_C D. Type of machinery used | If yes on Q382_C E. Type of fuel used 1. Diesel 2. Petrol 99. Do not know |
| 1. Clearing Removing remains of the crop, e.g. stumps, stones or other obstacles. | | | | | | |
| 9. Mulching Covering the soil to improve crop growth, e.g. to make soil more moist. | | | | | | |
| 14. Pruning To cut parts of branches to improve shape or growth. | | | | | | |
| 21. Top/side grafting Replacing part of a branch with another part (e.g. from a different variety). | | | | | | |
| 96. Other specify 1: | | | | | | |
| 97. Other specify 1: | | | | | | |
| 98. Other specify 1: | | | | | | |

X. Seed treatment

ONLY APPLY THIS PART IF Q4=3; 7; 8; 10; 12; 13; 14; 15; 17; 18; 19; 20; 21

We will now ask you some questions about the seed treatment program you use including whether or not you buy seeds and from where as well as the treatment program you use.

231. B. Are your seeds coated with crop protection products?

| | Growing area A | Growing area B |
|-----|----------------|----------------|
| Yes | 1 | 1 |
| No | 2 | 2 |

IF Q231B=1 (Yes)

233. Do you use on-farm or pre-treated seed treatment to treat the seeds for each growing area for [TARGET CROP]?

→ *Single response.*

| | Growing area A | Growing area B |
|----------------------------|----------------|----------------|
| On-farm seed treatment | 1 | 1 |
| Pre-treated seed treatment | 2 | 2 |
| None | 90 | 90 |
| Don't know / no answer | 99 | 99 |

IF Q231B=1 (coated seeds)

233. C. Could you please describe the crop protection products that have been used to treat the seeds for each growing area for [TARGET CROP]? In case the seeds have been pre-treated, please check the label to know the details of the seed treatment.

→ Please fill in 1 row with DON'T KNOW (-1 or 99) if seeds are treated but the farmer does not know the seed treatment.

- On what date did you apply the treatment?
- What is the type of product you applied?
 - Fungicide, insecticide, herbicide, plant growth regulator/harvest aids/adjuvants
- What is the brand product name?
 - e.g. Engeo. Please include all details of the product name.
- What is the brand product formulation?
 - M. e.g. 247 SC
- What is the dosage that you applied?
 - Note down dosage in g/ha or in grams per kilogram of seeds for solid products.
 - Note down dosage in ml/ha or in milliliter per kilogram of seeds for liquid products.
 - Always refer to the concentrate of a product (not the solution in water)
- What is the unit of quantity of the product applied?
 - Indicate the unit of quantity: grams or milliliter per hectare OR grams/kg of seeds or ml/kg of seeds
- What is the amount of water in which you have solved the product (per hectare)?
- What is the pest/disease/weed that is targeted?

GROWING AREA A

| Product number | a. Timing of product application | b.Type of product 1=Fungicide 2=Insecticide 4=Herbicide 8=Plant growth regulator/harvest aids/adjuvants | c. Brand product name | c2. Brand product formulation | d. Dosage | e. Unit of quantity 1=Gram/ hectare 2=Milliliter/ Hectare 3= g/kg of seeds 4= ml/kg of seeds | f. Amount of H ₂ O solved in liters per hectare | g. Pest/disease/ weed targeted |
|----------------|----------------------------------|---|-----------------------|-------------------------------|-----------|--|--|--------------------------------|
| 1 | --.---.---- (DD.MM.YYYY) | | | | | | | |
| 2 | --.---.---- (DD.MM.YYYY) | | | | | | | |
| 3 | --.---.---- (DD.MM.YYYY) | | | | | | | |
| 4 | --.---.---- (DD.MM.YYYY) | | | | | | | |
| 5 | --.---.---- (DD.MM.YYYY) | | | | | | | |

GROWING AREA B

| Product number | a. Timing of product application | b.Type of product 1=Fungicide 2=Insecticide 4=Herbicide 8=Plant growth regulator/harvest aids/adjuvants | c. Brand product name | c2. Brand product formulation | d. Dosage | e. Unit of quantity 1=Gram/ hectare 2=Milliliter/ Hectare 3= g/kg of seeds 4= ml/kg of seeds | f. Amount of H ₂ O solved in liters per hectare | g. Pest/disease/ weed targeted |
|----------------|----------------------------------|---|-----------------------|-------------------------------|-----------|--|--|--------------------------------|
| 1 | --.---.---- (DD.MM.YYYY) | | | | | | | |
| 2 | --.---.---- (DD.MM.YYYY) | | | | | | | |
| 3 | --.---.---- (DD.MM.YYYY) | | | | | | | |
| 4 | --.---.---- (DD.MM.YYYY) | | | | | | | |
| 5 | --.---.---- (DD.MM.YYYY) | | | | | | | |

ALL OF THE FOLLOWING QUESTIONS ONLY APPLY FOR RUSSIA SUNFLOWER (Q2=35 and Q4=18)

2500. We are now going to talk about the criteria that you consider when buying SUNFLOWER seeds. Could you please indicate the importance of each item on a 10-point scale, where:

1 = not important
10 = very important

→ Please circle the importance for each item.

| | 1 not impor- tant | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 very impor- tant | 99 Don't know / no answer |
|--|----------------------------|---|---|---|---|---|---|---|---|------------------------------|---------------------------------------|
| 1) Sunflower seeds that result in higher yields | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 99 |
| 2) Sunflower seeds that are resistant to broomrape | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 99 |
| 3) Sunflower seeds that are drought tolerant | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 99 |
| 4) Sunflower seeds that result in a higher oil content | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 99 |
| 5) Sunflower seeds that reduce the time of ripening | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 99 |
| 6) Sunflower seeds that are resistant to diseases | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 99 |

2500 B Are there any other items that are not included in the list above regarding important criteria when buying seeds?

→ Please note down important items

2501. What are, according to you, the 3 most critical planting qualities of SUNFLOWER seeds? Please circle in the first column the most important criteria, the second most important criteria in the second column and the third most important criteria in the third column.

→ Please circle the most important item in the first column, the second most important item in the second column and the third most important item in the third column.

| | 1 st | 2 nd | 3 rd |
|--|-----------------|-----------------|-----------------|
| Germination of sunflower seeds | 1 | 1 | 1 |
| Thousand seed weight of sunflower seeds | 2 | 2 | 2 |
| Sunflower seed homogeneity | 3 | 3 | 3 |
| Appearance of the sunflower seeds in the bag | 4 | 4 | 4 |
| Physical purity of sunflower seeds | 5 | 5 | 5 |
| Quality of the seed treatment of sunflower seeds | 6 | 6 | 6 |
| 96. Other. Specify 1: | 96 | 96 | 96 |
| 97. Other. Specify 2: | 97 | 97 | 97 |
| 98. Other. Specify 3: | 98 | 98 | 98 |
| Don't know/no answer | 99 | 99 | 99 |

2502. How important is the country where the SUNFLOWER seeds are produced to you?

→ Please circle what applies. (SR)

| | |
|------------------------|----|
| Very important | 4 |
| Rather important | 3 |
| Rather not important | 2 |
| Not important | 1 |
| Don't know / no answer | 99 |

2503. What is your preferred country of SUNFLOWER seeds production?

→ Please circle what applies. (SR)

| | | | | | | | |
|------------------------|----|-------------|----|-----------------|----|--------------|----|
| Algeria | 01 | Egypt | 12 | Jordan | 23 | Poland | 34 |
| Argentina | 02 | France | 13 | Kenya | 24 | Russia | 35 |
| Australia | 03 | Ghana | 14 | Korea | 25 | South Africa | 36 |
| Bangladesh | 04 | Guatemala | 15 | Malaysia | 26 | Spain | 37 |
| Belgium | 05 | Honduras | 16 | Mexico | 27 | Taiwan | 38 |
| Brazil | 06 | Hungary | 17 | Morocco | 28 | Thailand | 39 |
| China | 07 | India | 18 | The Netherlands | 29 | Ukraine | 40 |
| Colombia | 08 | Indonesia | 19 | Pakistan | 30 | USA | 41 |
| Costa Rica | 09 | Italy | 20 | Paraguay | 31 | Venezuela | 42 |
| East Africa | 10 | Ivory Coast | 21 | Peru | 32 | Vietnam | 43 |
| Ecuador | 11 | Japan | 22 | Philippines | 33 | Zambia | 44 |
| Other. Specify 1: | | | | | | | 98 |
| Don't know / no answer | | | | | | | 99 |

2504. A. From which companies do you buy SUNFLOWER seeds?

B. And how satisfied are you with SUNFLOWER seeds from...?

→ A. Please circle the companies that apply. Write down other if not in list. (MR)

B. Please indicate your satisfaction for each of the companies you buy sunflower seeds from (indicated in part A.).

| | a. | b. For each company indicated in a., please indicate your satisfaction | | | | |
|------------------------|----|--|--------------------|------------------|----------------|------------------------|
| | | Very unsatisfied | Rather unsatisfied | Rather satisfied | Very satisfied | Don't know / no answer |
| Syngenta | 1 | 1 | 2 | 3 | 4 | 99 |
| Pioneer | 2 | 1 | 2 | 3 | 4 | 99 |
| Bayer | 3 | 1 | 2 | 3 | 4 | 99 |
| KWS | 4 | 1 | 2 | 3 | 4 | 99 |
| BASF | 5 | 1 | 2 | 3 | 4 | 99 |
| Other specify 1: | 96 | 1 | 2 | 3 | 4 | 99 |
| Other specify 2: | 97 | 1 | 2 | 3 | 4 | 99 |
| Other specify 3: | 98 | 1 | 2 | 3 | 4 | 99 |
| Don't know / no answer | 99 | | | | | |

→ Please write down your answer.

| |
|--|
| |
|--|

→ Please write down your answer.

| |
|--|
| |
|--|

→ Please write down your answer.

_____.
(Day/Month/Year)

→ Please circle what applies. (SR)

| | |
|-----|---|
| Yes | 1 |
| No | 2 |

→ Please write down your answer.

| |
|--|
| |
|--|

→ Please circle what applies. (SR)

| | |
|------------------------|----|
| Very much valued | 4 |
| Rather valued | 3 |
| Rather not valued | 2 |
| Not valued at all | 1 |
| Don't know / no answer | 99 |

→ Please write down your answer.

| |
|--|
| |
|--|

2509. A. To which extent would you value direct delivery of the SUNFLOWER seeds from a seed manufacturer, rather than picking up or delivery from a distributor?

→ Please circle what applies. (SR)

| | |
|------------------------|----|
| Very much valued | 4 |
| Rather valued | 3 |
| Rather not valued | 2 |
| Not valued at all | 1 |
| Don't know / no answer | 99 |

B. Please **explain** your answer.

→ Please write down your answer.

2510. We are focussing on sunflower, but we would also like to ask some questions on CORN. We are now going to talk about the criteria that you consider when buying CORN seeds. Could you please indicate the importance of each item on a 10-point scale, where:

1 = not important

10 = very important

→ Please circle the importance for each item.

| | 1 not impor- tant | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 very impor- tant | 99 Don't know / no answer |
|--|----------------------------|---|---|---|---|---|---|---|---|------------------------------|---------------------------------------|
| 1) Corn seeds that are drought tolerant | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 99 |
| 2) Corn seeds that are resistant to soil diseases | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 99 |
| 3) Corn seeds with inoculants in order to make treatments before planting unnecessary | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 99 |
| 4) Corn seed varieties that withstand water and temperature stress in order to assure productivity | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 99 |
| 5) Corn seed varieties with 100% germination & vigor to get an even stand | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 99 |
| 6) Corn seed varieties that are resistant to cutworms preventing damage below and above ground | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 99 |
| 7) Corn seed varieties that are resistant to 80% of the diseases so you spend less on products | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 99 |

2510 B Are there any other items that are not included in the list above regarding important criteria when buying seeds?

→ Please note down important items

| |
|--|
| |
|--|

2511. What are, according to you, the 3 most critical planting qualities of CORN seeds? Please circle in the first column the most important criteria, the second most important criteria in the second column and the third most important criteria in the third column.

→ Please circle the most important item in the first column, the second most important item in the second column and the third most important item in the third column.

| | 1 st | 2 nd | 3 rd |
|---|-----------------|-----------------|-----------------|
| Germination of corn seeds | 1 | 1 | 1 |
| Thousand seed weight of corn seeds | 2 | 2 | 2 |
| Corn seed homogeneity | 3 | 3 | 3 |
| Appearance of the corn seeds in the bag | 4 | 4 | 4 |
| Physical purity of corn seeds | 5 | 5 | 5 |
| Quality of the seed treatment of corn seeds | 6 | 6 | 6 |
| 96. Other. Specify 1: | 96 | 96 | 96 |
| 97. Other. Specify 2: | 97 | 97 | 97 |
| 98. Other. Specify 3: | 98 | 98 | 98 |
| Don't know/no answer | 99 | 99 | 99 |

2512. How important is the country where the CORN seeds are produced to you?

→ Please circle what applies. (SR)

| | |
|------------------------|----|
| Very important | 4 |
| Rather important | 3 |
| Rather not important | 2 |
| Not important | 1 |
| Don't know / no answer | 99 |

2513. What is your preferred country of CORN seeds production?

→ Please circle what applies. (SR)

| | | | | | | | |
|------------------------|----|-------------|----|-----------------|----|--------------|----|
| Algeria | 01 | Egypt | 12 | Jordan | 23 | Poland | 34 |
| Argentina | 02 | France | 13 | Kenya | 24 | Russia | 35 |
| Australia | 03 | Ghana | 14 | Korea | 25 | South Africa | 36 |
| Bangladesh | 04 | Guatemala | 15 | Malaysia | 26 | Spain | 37 |
| Belgium | 05 | Honduras | 16 | Mexico | 27 | Taiwan | 38 |
| Brazil | 06 | Hungary | 17 | Morocco | 28 | Thailand | 39 |
| China | 07 | India | 18 | The Netherlands | 29 | Ukraine | 40 |
| Colombia | 08 | Indonesia | 19 | Pakistan | 30 | USA | 41 |
| Costa Rica | 09 | Italy | 20 | Paraguay | 31 | Venezuela | 42 |
| East Africa | 10 | Ivory Coast | 21 | Peru | 32 | Vietnam | 43 |
| Ecuador | 11 | Japan | 22 | Philippines | 33 | Zambia | 44 |
| Other. Specify 1: | | | | | | | 98 |
| Don't know / no answer | | | | | | | 99 |

2514. A. From which companies do you buy CORN seeds?

B. And how satisfied are you with CORN seeds from...?

→ A. Please circle the companies that apply. Write down other if not in list. (MR)

B. Please indicate your satisfaction on each of the companies you buy corn seeds from.

| | a. | b. For each company indicated in a., please indicate your satisfaction | | | | |
|------------------------|----|--|--------------------|------------------|----------------|------------------------|
| | | Very unsatisfied | Rather unsatisfied | Rather satisfied | Very satisfied | Don't know / no answer |
| Syngenta | 1 | 1 | 2 | 3 | 4 | 99 |
| Pioneer | 2 | 1 | 2 | 3 | 4 | 99 |
| Bayer | 3 | 1 | 2 | 3 | 4 | 99 |
| KWS | 4 | 1 | 2 | 3 | 4 | 99 |
| BASF | 5 | 1 | 2 | 3 | 4 | 99 |
| Other specify 1: | 96 | 1 | 2 | 3 | 4 | 99 |
| Other specify 2: | 97 | 1 | 2 | 3 | 4 | 99 |
| Other specify 3: | 98 | 1 | 2 | 3 | 4 | 99 |
| Don't know / no answer | 99 | | | | | |

IF Q2514A=1 (SYNGENTA)

2524. Why do you say you are [satisfied / not satisfied] with Syngenta for buying CORN seeds?

→ Please write down your answer.

IF Q2514A=2/3/4/5/96/97/98 (NOT SYNGENTA)

2525. Why do you say you are [satisfied / not satisfied] with Competitor brands for buying CORN seeds?

→ Please write down your answer.

2515. When do you prefer your CORN seeds to be delivered to your farm?

→ Please write down your answer.

-- . -- . --
(Day/Month/Year)

2516. Do you need all the CORN seeds (all varieties/portfolio) to be available at the same time?

→ Please circle what applies. (SR)

| | |
|-----|---|
| Yes | 1 |
| No | 2 |

IF Q2516=1 (yes)

2517. Why is this important to you?

→ Please write down your answer.

2518. A. To which extent do you value the ability to change your demand of CORN seeds (volume and/or variety) close to planting (e.g. February or March)?

→ Please circle what applies. (SR)

| | |
|------------------------|----|
| Very much valued | 4 |
| Rather valued | 3 |
| Rather not valued | 2 |
| Not valued at all | 1 |
| Don't know / no answer | 99 |

B. Please explain your answer.

→ Please write down your answer.

→ Please circle what applies. (SR)

B. Please explain your answer.

| |
|--|
| |
|--|

END OF PRE-HARVEST INTERVIEW

INTERVIEWER - PLEASE READ:

This ends the pre-harvest interview. Before we close, I would like to go through the topics of the next interview. I would like to ask you to fill in the rest of the interview prior to our next appointment.

Also, can we schedule the next visit already? When will you harvest [TARGET CROP]? When can we meet again?

INSTRUCTIONS FOR INTERVIEWER - VISIT 2

Please use this instruction sheet during the set-up of the after harvest interview ('VISIT 2'). Make sure to check-off all applicable boxes as you go. End by filling out your name and signature at the bottom of the page.

- Note down unique ID number:

Country code (see country codes in Q2)

Farm type (1=RF and 2=BF)

Unique respondent number

| | | | | | |
|---|--|---|---|--|--|
| | | | | | |
| ↑ | | ↑ | ↑ | | |

FOR REPEATED RESPONDENTS, PLEASE USE EXISTING UNIQUE ID NUMBER.

- Note down date of VISIT 2:

| | | | | | | | |
|--|--|--|--|---|---|---|---|
| | | | | 2 | 0 | 1 | 8 |
|--|--|--|--|---|---|---|---|

Please check off boxes to confirm all was done:

- Check which target crop you should discuss
- Check on which growing areas you should focus
- Remind grower about the target crop and growing areas
- Ask grower if he/she has already filled out the questionnaire
- Ask grower if he/she has already filled out the questions on product usage (Q229c and Q241).
If yes, go through document together to see if all is clear.
- Take about two pictures of the farmer and of his growing areas

| |
|--|
| |
| |
| |
| |
| |
| |

➤ NAME INTERVIEWER:

➤ SIGNATURE INTERVIEWER:

PART V: FARMING PRACTICES - AFTER HARVEST

242. Please fill out the unique code, given by the interviewer (has to be the same as in Q1):

UNIQUE CODE: **XX X XXX**

Country code (See country codes Q2)

Farm type (1=RF and 2=BF)

Respondent number (Unique respondent number)

ID 2 (IF APPLICABLE; 1=first season; 2=second season)

242. A. Please fill out the date of the interview:

Date (Date in DD.MM.YYYY)

Interviewer note: Please note down the growing area name again (see Q56)

| | Growing area A | Growing area B |
|-------------------|----------------|----------------|
| Field description | | |

FIELD CROPS ONLY

Interviewer note: Please note down the date of first field preparation (see Q72).

| | Growing area A | Growing area B |
|-------------------------|-----------------------------|-----------------------------|
| First field preparation | --.---.---- (DD.MM.YYYY) | --.---.---- (DD.MM.YYYY) |

TREE CROPS ONLY

Interviewer note: Please note down the date of pruning (see q4061/q4062 for all tree crops - q184 for apples and pears)

| | Growing area A | Growing area B |
|--------------|-----------------------------|-----------------------------|
| Pruning date | --.---.---- (DD.MM.YYYY) | --.---.---- (DD.MM.YYYY) |

ONLY ASK IF Q2=29 (COUNTRY = NETHERLANDS) OR Q2=2 (COUNTRY = ARGENTINA)

Q4. The crop of focus will be ...

| |
|-----------------|
| 01: APPLES |
| 02: BANANA |
| 03: BARLEY |
| 04: CAULIFLOWER |
| 05: COCOA |
| 06: COFFEE |
| 07: CORN |
| 08: COTTON |
| 09: GRAPE |

| |
|------------------|
| 10: OILSEED RAPE |
| 11: PEAR |
| 12: PEPPER |
| 13: POTATO |
| 14: RICE |
| 15: SOYBEAN |
| 16: STONE FRUIT |
| 17: SUGARCANE |
| 18: SUNFLOWER |
| 19: TOMATO |
| 20: WATERMELON |
| 21: WHEAT |
| 56: OKRA |
| 91: SORGHUM |

IF Q2=17 (COUNTRY = HUNGARY) ONLY ASK IF Q1=2 (BENCHMARK FARM)

397_NEW. We would like to understand if you have received a crop program or any recommendations for each growing area for [TARGET CROP] to implement this season.

Interviewer note: Please check PART I and note down the answer given to this question in PART I of the questionnaire

→ Read.

→ Single response.

| | Growing area A | Growing area B |
|--|----------------|----------------|
| I received a complete crop program (this includes recommendations on seeds, CP, and application times and/or dosages) | 1 | 1 |
| I received some recommendations but not a complete program (for example recommendations on seeds or CP or application times ...) | 2 | 2 |
| I did not receive any kind of crop program and/or recommendations | 90 | 90 |
| 98. Other specify: | | |
| Don't know / no answer | 99 | 99 |

V. Fertilizer usage

We will now ask some questions about your fertilizer usage, including the amounts and number of applications.

224. A. Did you perform a soil test for each growing area of [TARGET CROP]?

| | Growing area A | Growing area B |
|-----|----------------|----------------|
| Yes | 1 | 1 |
| No | 2 | 2 |

224. Do you apply organic fertilizers on each of the growing areas for [TARGET CROP]?

→ Please tick what applies. (SR)

| | Growing area A | Growing area B |
|-----|----------------|----------------|
| Yes | 1 | 1 |
| No | 2 | 2 |

226. Do you apply chemical fertilizers on each of the growing areas for [TARGET CROP]?

| | Growing area A | Growing area B |
|-----|----------------|----------------|
| Yes | 1 | 1 |
| No | 2 | 2 |

IF Q224=1 (applies organic fertilizers AND/OR IF Q226=1 (applies chemical fertilizers)

229. B. Could you please note down the total number of applications you perform with chemical and organic fertilizers on each of the growing areas for [TARGET CROP]?

- Please note down the total amount of fertilizer applications that applies for each growing area.
→ Interviewer note: the number of applications needs to correspond to Q229.C1

| | Growing area A | Growing area B |
|---|----------------|----------------|
| A. Number of chemical fertilizer applications | | |
| B. Number of organic fertilizer applications | | |

IF Q4=3; 4; 7; 8; 10; 12; 13; 14; 15; 17; 18; 19; 20; 21 (= all field crops)

Interviewer note: As a reminder, please note down again the date of first field preparation (see Q72).

| | Growing area A | Growing area B |
|-------------------------|-----------------------------------|-----------------------------------|
| First field preparation | -- : -- : -- : -- (DD.MM.YYYY) | -- : -- : -- : -- (DD.MM.YYYY) |

ONLY APPLY THIS PART IF Q4=1; 2; 5; 6; 9; 11; 16 (= all tree crops)

Interviewer note: As a reminder, please note down again the date of pruning (see Q4062).

| | Growing area A | Growing area B |
|--------------|-----------------------------------|-----------------------------------|
| Pruning date | -- : -- : -- : -- (DD.MM.YYYY) | -- : -- : -- : -- (DD.MM.YYYY) |

IF Q224=1 (applies organic fertilizers AND/OR IF Q226=1 (applies chemical fertilizers)

229. C1. Could you please note down all chemical and organic fertilizers that have been used for growing area A and growing area B for [TARGET CROP] from field preparation onwards?

- Please note down the following details per product. Please look in your crop protection products storage room if you don't know all details by heart.
- On what date did you apply the fertilizer?
 - Is this a chemical or an organic fertilizer?
 - What is the brand name of the fertilizer or product description?
 - Please provide as much detail as possible
 - e.g. NPK 15-15-15
 - What is the amount of fertilizer you applied?
 - Please note down dosage in kg/ha for solid products.
 - Please note down dosage in l/ha for liquid products.
 - Always refer to the concentrate of a product (not the solution in water)
 - What is the unit of quantity: kilogram or liter per hectare?
 - What is the amount of water in which you have solved the product (per hectare)?
 - What is amount (in percentage) of N (nitrogen) that the fertilizer contains?
 - What is amount (in percentage) of P (P₂O₅ or phosphate) that the fertilizer contains?
 - What is amount (in percentage) of K (K₂O or potassium) that the fertilizer contains?
 - Which type of application equipment did you use?
 - Hand operated sprayers (e.g. knapsack), motorized boom sprayer, airblast sprayer, granular applicator, Aerial applicator, other. If other, please specify.

GROWING AREA A

| Product number | a. Timing of product application | b. Type of product 1=Chemical fertilizer 2=Organic fertilizer | c. Brand product name or product description | d. Dosage (in kg/hectare or liter per hectare) | e. Unit of quantity 1=Kilogram/hectare 2=Liter/hectare | f. Amount of H ₂ O solved in liters per hectare | g. Percentage N (in %) | h. Percentage P (P ₂ O ₅) (in %) | i. Percentage K (K ₂ O) (in %) | j. Equipment type 1=Hand operated sprayers (e.g. knapsack), 2=Motorized boom sprayer 3=Airblast sprayer 4=Granular applicator 5=Aerial applicator 6=Other, specify |
|----------------|-------------------------------------|---|--|--|--|--|------------------------|---|---|--|
| 1 | __-__-__-__-__-__ _ (DD.MM.YYYY) | | | | | | | | | |
| 2 | __-__-__-__-__-__ _ (DD.MM.YYYY) | | | | | | | | | |
| 3 | __-__-__-__-__-__ _ (DD.MM.YYYY) | | | | | | | | | |
| 4 | __-__-__-__-__-__ _ (DD.MM.YYYY) | | | | | | | | | |
| 5 | __-__-__-__-__-__ _ (DD.MM.YYYY) | | | | | | | | | |
| 6 | __-__-__-__-__-__ _ (DD.MM.YYYY) | | | | | | | | | |
| 7 | __-__-__-__-__-__ _ (DD.MM.YYYY) | | | | | | | | | |
| 8 | __-__-__-__-__-__ _ (DD.MM.YYYY) | | | | | | | | | |
| 9 | __-__-__-__-__-__ _ (DD.MM.YYYY) | | | | | | | | | |
| 10 | __-__-__-__-__-__ _ (DD.MM.YYYY) | | | | | | | | | |

GROWING AREA B

| Product number | a. Timing of product application | b. Type of product 1=Chemical fertilizer 2=Organic fertilizer | c. Brand product name or product description | d. Dosage (in kg/hectare or liter per hectare) | e. Unit of quantity 1=Kilogram/hectare 2=Liter/hectare | f. Amount of H ₂ O solved in liters per hectare | g. Percentage N (in %) | h. Percentage P (P ₂ O ₅) (in %) | i. Percentage K (K ₂ O) (in %) | j. Equipment type 1=Hand operated sprayers (e.g. knapsack), 2=Motorized boom sprayer 3=Airblast sprayer 4=Granular applicator 5=Aerial applicator 6=Other, specify |
|----------------|-------------------------------------|---|--|--|--|--|------------------------|---|---|--|
| 1 | __-__-__-__-__-__ _ (DD.MM.YYYY) | | | | | | | | | |
| 2 | __-__-__-__-__-__ _ (DD.MM.YYYY) | | | | | | | | | |
| 3 | __-__-__-__-__-__ _ (DD.MM.YYYY) | | | | | | | | | |
| 4 | __-__-__-__-__-__ _ (DD.MM.YYYY) | | | | | | | | | |
| 5 | __-__-__-__-__-__ _ (DD.MM.YYYY) | | | | | | | | | |
| 6 | __-__-__-__-__-__ _ (DD.MM.YYYY) | | | | | | | | | |
| 7 | __-__-__-__-__-__ _ (DD.MM.YYYY) | | | | | | | | | |
| 8 | __-__-__-__-__-__ _ (DD.MM.YYYY) | | | | | | | | | |
| 9 | __-__-__-__-__-__ _ (DD.MM.YYYY) | | | | | | | | | |
| 10 | __-__-__-__-__-__ _ (DD.MM.YYYY) | | | | | | | | | |

382. Please describe per growing area if you performed the activity and how you performed it for [TARGET CROP].

Indicate if you have done this activity or not. If YES: please continue with all other questions related to this activity below.

- A. *How many times did you perform the activity? One performance equals the treatment of the entire area.*
- B. *How many man-days did it take to perform the activity? One man-day equals the amount of labor of one single worker during a day. Please consider all the performances/applications for the activity.*
- C. *Did you use any machinery to perform the activity? Machines rely on non-human energy sources (for example fuel or petrol) If YES; please continue with all the other questions.*
 - *Machines rely on non-human energy sources: for example: fuel or petrol*
- D. *Please tell us which type of machinery you used to complete the activity*
 - *Indicate the type of machinery that you used (for example: chisel plough, tractor, cultivator ...). We are NOT interested in the brand or make.*
- E. *Could you tell us which type of fuel the machine consumes?*
 - *For example: diesel or petrol*

| Growing area A | | | | | | |
|---|--|--|---|---|--|--|
| | 382_1: Did you perform the activity? 1=Yes 2=No | A. How many times did you perform this activity? | B. How many man-days did it take to perform [INSERT ACTIVITY] | C. Did you use any machinery for [INSERT ACTIVITY] 1= Yes 2= No | If yes on Q382_C D. Type of machinery used | If yes on Q382_C E. Type of fuel used 1. Diesel 2. Petrol 99. Do not know |
| 8. Applying fertilizers (both chemical and organic) | | | | | | |

| Growing area B | | | | | | |
|---|--|--|---|---|--|--|
| | 382_1: Did you perform the activity? 1=Yes 2=No | A. How many times did you perform this activity? | B. How many man-days did it take to perform [INSERT ACTIVITY] | C. Did you use any machinery for [INSERT ACTIVITY] 1= Yes 2= No | If yes on Q382_C D. Type of machinery used | If yes on Q382_C E. Type of fuel used 1. Diesel 2. Petrol 99. Do not know |
| 8. Applying fertilizers (both chemical and organic) | | | | | | |

X. Crop protection products

240 E. We now would like to better understand the pest pressure on the selected growing areas. Can you please tell us whether you consider the pressure of insects, diseases and weeds having been high, medium or low, for each growing area during the season of [TARGET CROP]?

→ READ, *single response per category*.

→ Please indicate the pressure below.

| | | Growing area A | | Growing area B | |
|----------------------|-------------|----------------|-------------|----------------|--|
| Insects | High | 3 | High | 3 | |
| | Medium | 2 | Medium | 2 | |
| | Low | 1 | Low | 1 | |
| | No pressure | 90 | No pressure | 90 | |
| Diseases | High | 3 | High | 3 | |
| | Medium | 2 | Medium | 2 | |
| | Low | 1 | Low | 1 | |
| | No pressure | 90 | No pressure | 90 | |
| Weeds | High | 3 | High | 3 | |
| | Medium | 2 | Medium | 2 | |
| | Low | 1 | Low | 1 | |
| | No pressure | 90 | No pressure | 90 | |
| Don't know/no answer | | 99 | | 99 | |

DO NOT ASK IF Q2=29 (NETHERLANDS)

240. E1. Do you generally use drift-reducing nozzles on your sprayer?

→ Interviewer note: drift-reducing nozzles are a type of nozzle designed to reduce movement of a pesticide through air, during or after application

| | |
|-----|---|
| Yes | 1 |
| No | 2 |

240 D. Could you please note down the total number of treatments you perform with crop protection products (fungicide, insecticide, herbicide, miticidas / acaricides, rodenticides, nematicides / molluscicides, plant growth regulator/harvest aids/adjuvants) on each of the growing areas for [TARGET CROP]?

- ➔ Please note down the total amount of crop protection product applications that applies for each growing area.
- ➔ Interviewer note: The answer should correspond with the number of applications filled in for Q241.
- ➔ Exclude seed treatment products and fertilizer applications!

| | Growing area A | Growing area B |
|--|----------------|----------------|
| Number of crop protection product applications | | |

IF Q4=3; 4; 7; 8; 10; 12; 13; 14; 15; 17; 18; 19; 20; 21 (= all field crops)

Interviewer note: As a reminder, please note down again the date of first field preparation (see Q72).

| | Growing area A | Growing area B |
|-------------------------|-----------------------------|-----------------------------|
| First field preparation | --.---.---- (DD.MM.YYYY) | --.---.---- (DD.MM.YYYY) |

ONLY APPLY THIS PART IF Q4=1; 2; 5; 6; 9; 11; 16 (= all tree crops)

Interviewer note: As a reminder, please note down again the date of pruning (see Q4062).

| | Growing area A | Growing area B |
|--------------|-----------------------------|-----------------------------|
| Pruning date | --.---.---- (DD.MM.YYYY) | --.---.---- (DD.MM.YYYY) |

241. Could you please note down, on the next page, all crop protection products that have been used for growing area A and growing area B for [TARGET CROP]?

- ➔ Please note down the following details per product. Please look in your crop protection products storage room if you don't know all details by heart.
- ➔ Please note this information down per treatment. Consider one table on one page for one treatment.

- a. On what date did you apply the treatment?
- b. What is the type of product you applied?
 - Fungicide, insecticide, herbicide, miticidas / acaricides, rodenticides, nematicides / molluscicides, plant growth regulator/harvest aids/adjuvants
- c. What is the brand product name?
 - e.g. Engeo. Please include all details of the product name.
- c1. What is the brand product formulation?
 - e.g. 247 SC
- d. What is the dosage that you applied?
 - Note down dosage in **g/ha** for solid products.
 - Not down dosage in **ml/ha** for liquid products.
 - Always refer to the concentrate of a product (not the solution in water)
- e. What is the unit of quantity of the product applied?
 - Indicate the unit of quantity: **grams or milliliter per hectare**.
- f. What is the amount of water in which you have solved the product (**per hectare**)?
- g. What is the pest/disease/weed that is targeted?
- h. What is the level of pest/disease/weed pressure? Is this low, medium or high?
- i. What is the percentage of the area that is treated against pests/diseases/weeds?
- j. What is the percentage of the area that is free of pests/diseases/weeds at harvest?
- k. Which type of application equipment did you use?
 - Hand operated sprayers (e.g. knapsack), motorized boom sprayer, airblast sprayer, granular applicator, Aerial applicator, other.
 - If other, please specify.
- n. What is the timing of the treatment - before crop-emergence or after crop-emergence?

UNIQUE CODE:

GROWING AREA A - Treatment 1

| Prod-uct numb-er | a. Timing of product application | b.Type of product 1=Fungicide 2=Insecticide 4=Herbicide 5=Miticides/ acaricides 6=Rodenticides 7=Nematicides/ molluscicides 8=Plant growth regulator/harvest aids/adjuvants | c. Brand product name | c1. Brand product formulation | d. Dosage (in gram/hectare or mililiter /hectare) <i>Use '-1' if don't know</i> | e. Unit of quantity 1=Gram/ hectare 2=Mililiter/ hectare | f. Amount of H ₂ O solved in liters per hectare <i>Use '0' if no water; Use '-1' if don't know</i> | g. Pest/disease/ weed targeted | h. Level of pest/ disease/ weed pressure 1=Low pressure 2=Medium pressure 3=High pressure | i. Percentage of the area treated against pests/ diseases/ weeds (in %) | j. Percentage of crop free of pests/ diseases/ weeds at harvest (in %) | k. Equipment type 1=Hand operated sprayers (e.g. knapsack), 2=Motorized boom sprayer 3=Airblast sprayer 4=Granular applicator 5=Aerial applicator 6=Other,specify | n. Timing of treatment 1=Pre-emergence (soil is treated) 2=Post-emergence (crop already emerged) |
|------------------|----------------------------------|--|-----------------------|-------------------------------|---|--|--|--------------------------------|--|---|--|---|--|
| 0 | 02.05.2018 | 2 | Engeo | 247 SC | 500 | 2 | 200 | Tuta absoluta | 2 | 90 | 100 | 2 | |
| 1 | ---.---.--- (DD.MM.YYYY) | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | |

GROWING AREA A - Treatment 2

| Prod-uct numb-er | a. Timing of product application | b.Type of product 1=Fungicide 2=Insecticide 4=Herbicide 5=Miticides/ acaricides 6=Rodenticides 7=Nematicides/ molluscicides 8=Plant growth regulator/harvest aids/adjuvants | c. Brand product name | c1. Brand product formulation | d. Dosage (in gram/hectare or mililiter /hectare) <i>Use '-1' if don't know</i> | e. Unit of quantity 1=Gram/ hectare 2=Mililiter/ hectare | f. Amount of H ₂ O solved in liters per hectare <i>Use '0' if no water; Use '-1' if don't know</i> | g. Pest/disease/ weed targeted | h. Level of pest/ disease/ weed pressure 1=Low pressure 2=Medium pressure 3=High pressure | i. Percentage of the area treated against pests/ diseases/ weeds (in %) | j. Percentage of crop free of pests/ diseases/ weeds at harvest (in %) | k. Equipment type 1=Hand operated sprayers (e.g. knapsack), 2=Motorized boom sprayer 3=Airblast sprayer 4=Granular applicator 5=Aerial applicator 6=Other,specify | n. Timing of treatment 1=Pre-emergence (soil is treated) 2=Post-emergence (crop already emerged) |
|------------------|----------------------------------|--|-----------------------|-------------------------------|---|--|--|--------------------------------|--|---|--|---|--|
| 1 | ---.---.--- (DD.MM.YYYY) | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | |

UNIQUE CODE:

GROWING AREA A - Treatment 3

| Prod-uct numb-er | a. Timing of product application | b.Type of product 1=Fungicide 2=Insecticide 4=Herbicide 5=Miticides/ acaricides 6=Rodenticides 7=Nematicides/ molluscicides 8=Plant growth regulator/ harvest aids/ adjuvants | c. Brand product name | c1. Brand product formulation | d. Dosage (in gram/hectare or mililiter /hectare) Use '-1' if don't know | e. Unit of quantity 1=Gram/ hectare 2=Mililiter/ hectare | f. Amount of H ₂ O solved in liters per hectare Use '0' if no water; Use '-1' if don't know | g. Pest/disease/ weed targeted | h. Level of pest/ disease/ weed pressure 1=Low pressure 2=Medium pressure 3=High pressure | i. Percentage of the area treated against pests/ diseases/ weeds (in %) | j. Percentage of crop free of pests/ diseases/ weeds at harvest (in %) | k. Equipment type 1=Hand operated sprayers (e.g. knapsack), 2=Motorized boom sprayer 3=Airblast sprayer 4=Granular applicator 5=Aerial applicator 6=Other,specify | n. Timing of treatment 1=Pre-emergence (soil is treated) 2=Post-emergence (crop already emerged) |
|------------------|----------------------------------|---|-----------------------|-------------------------------|--|--|--|--------------------------------|--|---|--|---|--|
| 1 | --.-.-.-.- - (DD.MM.YYYY) | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | |

GROWING AREA A - Treatment 4

| Prod-uct numb-er | a. Timing of product application | b.Type of product 1=Fungicide 2=Insecticide 4=Herbicide 5=Miticides/ acaricides 6=Rodenticides 7=Nematicides/ molluscicides 8=Plant growth regulator/ harvest aids/ adjuvants | c. Brand product name | c1. Brand product formulation | d. Dosage (in gram/hectare or mililiter /hectare) Use '-1' if don't know | e. Unit of quantity 1=Gram/ hectare 2=Mililiter/ hectare | f. Amount of H ₂ O solved in liters per hectare Use '0' if no water; Use '-1' if don't know | g. Pest/disease/ weed targeted | h. Level of pest/ disease/ weed pressure 1=Low pressure 2=Medium pressure 3=High pressure | i. Percentage of the area treated against pests/ diseases/ weeds (in %) | j. Percentage of crop free of pests/ diseases/ weeds at harvest (in %) | k. Equipment type 1=Hand operated sprayers (e.g. knapsack), 2=Motorized boom sprayer 3=Airblast sprayer 4=Granular applicator 5=Aerial applicator 6=Other,specify | n. Timing of treatment 1=Pre-emergence (soil is treated) 2=Post-emergence (crop already emerged) |
|------------------|----------------------------------|---|-----------------------|-------------------------------|--|--|--|--------------------------------|--|---|--|---|--|
| 1 | --.-.-.-.- - (DD.MM.YYYY) | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | |

UNIQUE CODE:

GROWING AREA A - Treatment 5

| Prod-uct numb-er | a. Timing of product application | b.Type of product 1=Fungicide 2=Insecticide 4=Herbicide 5=Miticides/ acaricides 6=Rodenticides 7=Nematicides/ molluscicides 8=Plant growth regulator/ harvest aids/ adjuvants | c. Brand product name | c1. Brand product formulation | d. Dosage (in gram/hectare or milliliter /hectare) Use '-1' if don't know | e. Unit of quantity 1=Gram/ hectare 2=Milliliter/ hectare | f. Amount of H ₂ O solved in liters per hectare Use '0' if no water; Use '-1' if don't know | g. Pest/disease/ weed targeted | h. Level of pest/ disease/ weed pressure 1=Low pressure 2=Medium pressure 3=High pressure | i. Percentage of the area treated against pests/ diseases/ weeds (in %) | j. Percentage of crop free of pests/ diseases/ weeds at harvest (in %) | k. Equipment type 1=Hand operated sprayers (e.g. knapsack), 2=Motorized boom sprayer 3=Airblast sprayer 4=Granular applicator 5=Aerial applicator 6=Other,specify | n. Timing of treatment 1=Pre-emergence (soil is treated) 2=Post-emergence (crop already emerged) |
|------------------|----------------------------------|---|-----------------------|-------------------------------|---|---|--|--------------------------------|--|---|--|---|--|
| 1 | ---'---'--- - (DD.MM.YYYY) | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | |

GROWING AREA A - Treatment 6

| Prod-uct numb-er | a. Timing of product application | b.Type of product 1=Fungicide 2=Insecticide 4=Herbicide 5=Miticides/ acaricides 6=Rodenticides 7=Nematicides/ molluscicides 8=Plant growth regulator/ harvest aids/ adjuvants | c. Brand product name | c1. Brand product formulation | d. Dosage (in gram/hectare or milliliter /hectare) Use '-1' if don't know | e. Unit of quantity 1=Gram/ hectare 2=Milliliter/ hectare | f. Amount of H ₂ O solved in liters per hectare Use '0' if no water; Use '-1' if don't know | g. Pest/disease/ weed targeted | h. Level of pest/ disease/ weed pressure 1=Low pressure 2=Medium pressure 3=High pressure | i. Percentage of the area treated against pests/ diseases/ weeds (in %) | j. Percentage of crop free of pests/ diseases/ weeds at harvest (in %) | k. Equipment type 1=Hand operated sprayers (e.g. knapsack), 2=Motorized boom sprayer 3=Airblast sprayer 4=Granular applicator 5=Aerial applicator 6=Other,specify | n. Timing of treatment 1=Pre-emergence (soil is treated) 2=Post-emergence (crop already emerged) |
|------------------|----------------------------------|---|-----------------------|-------------------------------|---|---|--|--------------------------------|--|---|--|---|--|
| 1 | ---'---'--- - (DD.MM.YYYY) | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | |

UNIQUE CODE:

GROWING AREA A - Treatment 7

| Prod-uct numb-er | a. Timing of product application | b.Type of product 1=Fungicide 2=Insecticide 4=Herbicide 5=Miticides/ acaricides 6=Rodenticides 7=Nematicides/ molluscicides 8=Plant growth regulator/ harvest aids/ adjuvants | c. Brand product name | c1. Brand product formulation | d. Dosage (in gram/hectare or mililiter /hectare) Use '-1' if don't know | e. Unit of quantity 1=Gram/ hectare 2=Mililiter/ hectare | f. Amount of H ₂ O solved in liters per hectare Use '0' if no water; Use '-1' if don't know | g. Pest/disease/ weed targeted | h. Level of pest/ disease/ weed pressure 1=Low pressure 2=Medium pressure 3=High pressure | i. Percentage of the area treated against pests/ diseases/ weeds (in %) | j. Percentage of crop free of pests/ diseases/ weeds at harvest (in %) | k. Equipment type 1=Hand operated sprayers (e.g. knapsack), 2=Motorized boom sprayer 3=Airblast sprayer 4=Granular applicator 5=Aerial applicator 6=Other,specify | n. Timing of treatment 1=Pre-emergence (soil is treated) 2=Post-emergence (crop already emerged) |
|------------------|----------------------------------|--|-----------------------|-------------------------------|--|--|--|--------------------------------|--|---|--|---|--|
| 1 | - - - - - - (DD.MM.YYYY) | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | |

GROWING AREA A - Treatment 8

| Prod-uct numb-er | a. Timing of product application | b.Type of product 1=Fungicide 2=Insecticide 4=Herbicide 5=Miticides/ acaricides 6=Rodenticides 7=Nematicides/ molluscicides 8=Plant growth regulator/ harvest aids/ adjuvants | c. Brand product name | c1. Brand product formulation | d. Dosage (in gram/hectare or mililiter /hectare) Use '-1' if don't know | e. Unit of quantity 1=Gram/ hectare 2=Mililiter/ hectare | f. Amount of H ₂ O solved in liters per hectare Use '0' if no water; Use '-1' if don't know | g. Pest/disease/ weed targeted | h. Level of pest/ disease/ weed pressure 1=Low pressure 2=Medium pressure 3=High pressure | i. Percentage of the area treated against pests/ diseases/ weeds (in %) | j. Percentage of crop free of pests/ diseases/ weeds at harvest (in %) | k. Equipment type 1=Hand operated sprayers (e.g. knapsack), 2=Motorized boom sprayer 3=Airblast sprayer 4=Granular applicator 5=Aerial applicator 6=Other,specify | n. Timing of treatment 1=Pre-emergence (soil is treated) 2=Post-emergence (crop already emerged) |
|------------------|----------------------------------|--|-----------------------|-------------------------------|--|--|--|--------------------------------|--|---|--|---|--|
| 1 | - - - - - - (DD.MM.YYYY) | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | |

UNIQUE CODE:

GROWING AREA A - Treatment 9

| Prod-uct numb-er | a. Timing of product application | b.Type of product 1=Fungicide 2=Insecticide 4=Herbicide 5=Miticides/ acaricides 6=Rodenticides 7=Nematicides/ molluscicides 8=Plant growth regulator /harvest aids/ adjuvants | c. Brand product name | c1. Brand product formulation | d. Dosage (in gram/hectare or mililiter /hectare) Use '-1' if don't know | e. Unit of quantity 1=Gram/ hectare 2=Mililiter/ hectare | f. Amount of H ₂ O solved in liters per hectare Use '0' if no water; Use '-1' if don't know | g. Pest/disease/ weed targeted | h. Level of pest/ disease/ weed pressure 1=Low pressure 2=Medium pressure 3=High pressure | i. Percentage of the area treated against pests/ diseases/ weeds (in %) | j. Percentage of crop free of pests/ diseases/ weeds at harvest (in %) | k. Equipment type 1=Hand operated sprayers (e.g. knapsack), 2=Motorized boom sprayer 3=Airblast sprayer 4=Granular applicator 5=Aerial applicator 6=Other,specify | n. Timing of treatment 1=Pre-emergence (soil is treated) 2=Post-emergence (crop already emerged) |
|------------------|----------------------------------|---|-----------------------|-------------------------------|--|--|--|--------------------------------|--|---|--|---|--|
| 1 | - - - - - - (DD.MM.YYYY) | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | |

GROWING AREA A - Treatment 10

| Prod-uct numb-er | a. Timing of product application | b.Type of product 1=Fungicide 2=Insecticide 4=Herbicide 5=Miticides/ acaricides 6=Rodenticides 7=Nematicides/ molluscicides 8=Plant growth regulator /harvest aids/ adjuvants | c. Brand product name | c1. Brand product formulation | d. Dosage (in gram/hectare or mililiter /hectare) Use '-1' if don't know | e. Unit of quantity 1=Gram/ hectare 2=Mililiter/ hectare | f. Amount of H ₂ O solved in liters per hectare Use '0' if no water; Use '-1' if don't know | g. Pest/disease/ weed targeted | h. Level of pest/ disease/ weed pressure 1=Low pressure 2=Medium pressure 3=High pressure | i. Percentage of the area treated against pests/ diseases/ weeds (in %) | j. Percentage of crop free of pests/ diseases/ weeds at harvest (in %) | k. Equipment type 1=Hand operated sprayers (e.g. knapsack), 2=Motorized boom sprayer 3=Airblast sprayer 4=Granular applicator 5=Aerial applicator 6=Other,specify | n. Timing of treatment 1=Pre-emergence (soil is treated) 2=Post-emergence (crop already emerged) |
|------------------|----------------------------------|---|-----------------------|-------------------------------|--|--|--|--------------------------------|--|---|--|---|--|
| 1 | - - - - - - (DD.MM.YYYY) | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | |

UNIQUE CODE:

GROWING AREA B - Treatment 1

| Prod-uct numb-er | a. Timing of product application | b.Type of product 1=Fungicide 2=Insecticide 4=Herbicide 5=Miticides/ acaricides 6=Rodenticides 7=Nematicides/ molluscicides 8=Plant growth regulator/harvest aids/adjuvants | c. Brand product name | c1. Brand product formulation | d. Dosage (in gram/hectare or mililiter /hectare) <i>Use '-1' if don't know</i> | e. Unit of quantity 1=Gram/hectare 2=Mililiter/hectare | f. Amount of H ₂ O solved in liters per hectare <i>Use '0' if no water; Use '-1' if don't know</i> | g. Pest/disease/weed targeted | h. Level of pest/disease/ weed pressure 1=Low pressure 2=Medium pressure 3=High pressure | i. Percentage of the area treated against pests/diseases/ weeds (in %) | j. Percentage of crop free of pests/ diseases/weeds at harvest (in %) | k. Equipment type 1=Hand operated sprayers (e.g. knapsack), 2=Motorized boom sprayer 3=Airblast sprayer 4=Granular applicator 5=Aerial applicator 6=Other,specify | n. Timing of treatment 1=Pre-emergence (soil is treated) 2=Post-emergence (crop already emerged) |
|------------------|----------------------------------|--|-----------------------|-------------------------------|---|--|--|-------------------------------|---|--|---|---|--|
| 0 | 02.05.2018 | 2 | Engeo | 247 SC | 500 | 2 | 200 | Tuta absoluta | 2 | 90 | 100 | 2 | |
| 1 | ---'---'--- (DD.MM.YYYY) | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | |

GROWING AREA B - Treatment 2

| Prod-uct numb-er | a. Timing of product application | b.Type of product 1=Fungicide 2=Insecticide 4=Herbicide 5=Miticides/ acaricides 6=Rodenticides 7=Nematicides/ molluscicides 8=Plant growth regulator/harvest aids/adjuvants | c. Brand product name | c1. Brand product formulation | d. Dosage (in gram/hectare or mililiter /hectare) <i>Use '-1' if don't know</i> | e. Unit of quantity 1=Gram/hectare 2=Mililiter/hectare | f. Amount of H ₂ O solved in liters per hectare <i>Use '0' if no water; Use '-1' if don't know</i> | g. Pest/disease/weed targeted | h. Level of pest/disease/ weed pressure 1=Low pressure 2=Medium pressure 3=High pressure | i. Percentage of the area treated against pests/diseases/ weeds (in %) | j. Percentage of crop free of pests/ diseases/weeds at harvest (in %) | k. Equipment type 1=Hand operated sprayers (e.g. knapsack), 2=Motorized boom sprayer 3=Airblast sprayer 4=Granular applicator 5=Aerial applicator 6=Other,specify | n. Timing of treatment 1=Pre-emergence (soil is treated) 2=Post-emergence (crop already emerged) |
|------------------|----------------------------------|--|-----------------------|-------------------------------|---|--|--|-------------------------------|---|--|---|---|--|
| 1 | ---'---'--- (DD.MM.YYYY) | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | |

UNIQUE CODE:

GROWING AREA B - Treatment 3

| Prod-uct numb-er | a. Timing of product application | b.Type of product 1=Fungicide 2=Insecticide 4=Herbicide 5=Miticides/ acaricides 6=Rodenticides 7=Nematicides/ molluscicides 8=Plant growth regulator/ harvest aids/ adjuvants | c. Brand product name | c1. Brand product formulation | d. Dosage (in gram/hectare or mililiter /hectare) <i>Use '-1' if don't know</i> | e. Unit of quantity 1=Gram/ hectare 2=Mililiter/ hectare | f. Amount of H ₂ O solved in liters per hectare <i>Use '0' if no water; Use '-1' if don't know</i> | g. Pest/disease/ weed targeted | h. Level of pest/ disease/ weed pressure 1=Low pressure 2=Medium pressure 3=High pressure | i. Percentage of the area treated against pests/ diseases/ weeds (in %) | j. Percentage of crop free of pests/ diseases/ weeds at harvest (in %) | k. Equipment type 1=Hand operated sprayers (e.g. knapsack), 2=Motorized boom sprayer 3=Airblast sprayer 4=Granular applicator 5=Aerial applicator 6=Other,specify | n. Timing of treatment 1=Pre-emergence (soil is treated) 2=Post-emergence (crop already emerged) |
|------------------|----------------------------------|--|-----------------------|-------------------------------|---|--|--|--------------------------------|--|---|--|---|--|
| 1 | ---'---'--- - (DD.MM.YYYY) | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | |

GROWING AREA B - Treatment 4

| Prod-uct numb-er | a. Timing of product application | b.Type of product 1=Fungicide 2=Insecticide 4=Herbicide 5=Miticides/ acaricides 6=Rodenticides 7=Nematicides/ molluscicides 8=Plant growth regulator/ harvest aids/ adjuvants | c. Brand product name | c1. Brand product formulation | d. Dosage (in gram/hectare or mililiter /hectare) <i>Use '-1' if don't know</i> | e. Unit of quantity 1=Gram/ hectare 2=Mililiter/ hectare | f. Amount of H ₂ O solved in liters per hectare <i>Use '0' if no water; Use '-1' if don't know</i> | g. Pest/disease/ weed targeted | h. Level of pest/ disease/ weed pressure 1=Low pressure 2=Medium pressure 3=High pressure | i. Percentage of the area treated against pests/ diseases/ weeds (in %) | j. Percentage of crop free of pests/ diseases/ weeds at harvest (in %) | k. Equipment type 1=Hand operated sprayers (e.g. knapsack), 2=Motorized boom sprayer 3=Airblast sprayer 4=Granular applicator 5=Aerial applicator 6=Other,specify | n. Timing of treatment 1=Pre-emergence (soil is treated) 2=Post-emergence (crop already emerged) |
|------------------|----------------------------------|--|-----------------------|-------------------------------|---|--|--|--------------------------------|--|---|--|---|--|
| 1 | ---'---'--- - (DD.MM.YYYY) | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | |

UNIQUE CODE:

GROWING AREA B - Treatment 5

| Prod-uct numb-er | a. Timing of product application | b.Type of product 1=Fungicide 2=Insecticide 4=Herbicide 5=Miticides/ acaricides 6=Rodenticides 7=Nematicides/ molluscicides 8=Plant growth regulator/ harvest aids/ adjuvants | c. Brand product name | c1. Brand product formulation | d. Dosage (in gram/hectare or mililiter /hectare) Use '-1' if don't know | e. Unit of quantity 1=Gram/ hectare 2=Mililiter/ hectare | f. Amount of H ₂ O solved in liters per hectare Use '0' if no water; Use '-1' if don't know | g. Pest/disease/ weed targeted | h. Level of pest/ disease/ weed pressure 1=Low pressure 2=Medium pressure 3=High pressure | i. Percentage of the area treated against pests/ diseases/ weeds (in %) | j. Percentage of crop free of pests/ diseases/ weeds at harvest (in %) | k. Equipment type 1=Hand operated sprayers (e.g. knapsack), 2=Motorized boom sprayer 3=Airblast sprayer 4=Granular applicator 5=Aerial applicator 6=Other,specify | n. Timing of treatment 1=Pre-emergence (soil is treated) 2=Post-emergence (crop already emerged) |
|------------------|----------------------------------|---|-----------------------|-------------------------------|--|--|--|--------------------------------|--|---|--|---|--|
| 1 | ---'---'--- - (DD.MM.YYYY) | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | |

GROWING AREA B - Treatment 6

| Prod-uct numb-er | a. Timing of product application | b.Type of product 1=Fungicide 2=Insecticide 4=Herbicide 5=Miticides/ acaricides 6=Rodenticides 7=Nematicides/ molluscicides 8=Plant growth regulator/ harvest aids/ adjuvants | c. Brand product name | c1. Brand product formulation | d. Dosage (in gram/hectare or mililiter /hectare) Use '-1' if don't know | e. Unit of quantity 1=Gram/ hectare 2=Mililiter/ hectare | f. Amount of H ₂ O solved in liters per hectare Use '0' if no water; Use '-1' if don't know | g. Pest/disease/ weed targeted | h. Level of pest/ disease/ weed pressure 1=Low pressure 2=Medium pressure 3=High pressure | i. Percentage of the area treated against pests/ diseases/ weeds (in %) | j. Percentage of crop free of pests/ diseases/ weeds at harvest (in %) | k. Equipment type 1=Hand operated sprayers (e.g. knapsack), 2=Motorized boom sprayer 3=Airblast sprayer 4=Granular applicator 5=Aerial applicator 6=Other,specify | n. Timing of treatment 1=Pre-emergence (soil is treated) 2=Post-emergence (crop already emerged) |
|------------------|----------------------------------|---|-----------------------|-------------------------------|--|--|--|--------------------------------|--|---|--|---|--|
| 1 | ---'---'--- - (DD.MM.YYYY) | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | |

UNIQUE CODE:

GROWING AREA B - Treatment 7

| Prod-uct numb-er | a. Timing of product application | b.Type of product 1=Fungicide 2=Insecticide 4=Herbicide 5=Miticides/ acaricides 6=Rodenticides 7=Nematicides/ molluscicides 8=Plant growth regulator/ harvest aids/ adjuvants | c. Brand product name | c1. Brand product formulation | d. Dosage (in gram/hectare or milliliter /hectare) Use '-1' if don't know | e. Unit of quantity 1=Gram/ hectare 2=Milliliter/ hectare | f. Amount of H ₂ O solved in liters per hectare Use '0' if no water; Use '-1' if don't know | g. Pest/disease/ weed targeted | h. Level of pest/ disease/ weed pressure 1=Low pressure 2=Medium pressure 3=High pressure | i. Percentage of the area treated against pests/ diseases/ weeds (in %) | j. Percentage of crop free of pests/ diseases/ weeds at harvest (in %) | k. Equipment type 1=Hand operated sprayers (e.g. knapsack), 2=Motorized boom sprayer 3=Airblast sprayer 4=Granular applicator 5=Aerial applicator 6=Other,specify | n. Timing of treatment 1=Pre-emergence (soil is treated) 2=Post-emergence (crop already emerged) |
|------------------|----------------------------------|---|-----------------------|-------------------------------|---|---|--|--------------------------------|--|---|--|---|--|
| 1 | ---.---.--- - (DD.MM.YYYY) | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | |

GROWING AREA B - Treatment 8

| Prod-uct numb-er | a. Timing of product application | b.Type of product 1=Fungicide 2=Insecticide 4=Herbicide 5=Miticides/ acaricides 6=Rodenticides 7=Nematicides/ molluscicides 8=Plant growth regulator/ harvest aids/ adjuvants | c. Brand product name | c1. Brand product formulation | d. Dosage (in gram/hectare or milliliter /hectare) Use '-1' if don't know | e. Unit of quantity 1=Gram/ hectare 2=Milliliter/ hectare | f. Amount of H ₂ O solved in liters per hectare Use '0' if no water; Use '-1' if don't know | g. Pest/disease/ weed targeted | h. Level of pest/ disease/ weed pressure 1=Low pressure 2=Medium pressure 3=High pressure | i. Percentage of the area treated against pests/ diseases/ weeds (in %) | j. Percentage of crop free of pests/ diseases/ weeds at harvest (in %) | k. Equipment type 1=Hand operated sprayers (e.g. knapsack), 2=Motorized boom sprayer 3=Airblast sprayer 4=Granular applicator 5=Aerial applicator 6=Other,specify | n. Timing of treatment 1=Pre-emergence (soil is treated) 2=Post-emergence (crop already emerged) |
|------------------|----------------------------------|---|-----------------------|-------------------------------|---|---|--|--------------------------------|--|---|--|---|--|
| 1 | ---.---.--- - (DD.MM.YYYY) | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | |

UNIQUE CODE:

GROWING AREA B - Treatment 9

| Prod-uct numb-er | a. Timing of product application | b.Type of product 1=Fungicide 2=Insecticide 4=Herbicide 5=Miticides/ acaricides 6=Rodenticides 7=Nematicides/ molluscicides 8=Plant growth regulator/ harvest aids/ adjuvants | c. Brand product name | c1. Brand product formulation | d. Dosage (in gram/hectare or mililiter /hectare) Use '-1' if don't know | e. Unit of quantity 1=Gram/ hectare 2=Mililiter/ hectare | f. Amount of H ₂ O solved in liters per hectare Use '0' if no water; Use '-1' if don't know | g. Pest/disease/ weed targeted | h. Level of pest/ disease/ weed pressure 1=Low pressure 2=Medium pressure 3=High pressure | i. Percentage of the area treated against pests/ diseases/ weeds (in %) | j. Percentage of crop free of pests/ diseases/ weeds at harvest (in %) | k. Equipment type 1=Hand operated sprayers (e.g. knapsack), 2=Motorized boom sprayer 3=Airblast sprayer 4=Granular applicator 5=Aerial applicator 6=Other,specify | n. Timing of treatment 1=Pre-emergence (soil is treated) 2=Post-emergence (crop already emerged) |
|------------------|----------------------------------|---|-----------------------|-------------------------------|--|--|--|--------------------------------|--|---|--|---|--|
| 1 | --.-.-.-.- - (DD.MM.YYYY) | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | |

GROWING AREA B - Treatment 10

| Prod-uct numb-er | a. Timing of product application | b.Type of product 1=Fungicide 2=Insecticide 4=Herbicide 5=Miticides/ acaricides 6=Rodenticides 7=Nematicides/ molluscicides 8=Plant growth regulator/ harvest aids/ adjuvants | c. Brand product name | c1. Brand product formulation | d. Dosage (in gram/hectare or mililiter /hectare) Use '-1' if don't know | e. Unit of quantity 1=Gram/ hectare 2=Mililiter/ hectare | f. Amount of H ₂ O solved in liters per hectare Use '0' if no water; Use '-1' if don't know | g. Pest/disease/ weed targeted | h. Level of pest/ disease/ weed pressure 1=Low pressure 2=Medium pressure 3=High pressure | i. Percentage of the area treated against pests/ diseases/ weeds (in %) | j. Percentage of crop free of pests/ diseases/ weeds at harvest (in %) | k. Equipment type 1=Hand operated sprayers (e.g. knapsack), 2=Motorized boom sprayer 3=Airblast sprayer 4=Granular applicator 5=Aerial applicator 6=Other,specify | n. Timing of treatment 1=Pre-emergence (soil is treated) 2=Post-emergence (crop already emerged) |
|------------------|----------------------------------|---|-----------------------|-------------------------------|--|--|--|--------------------------------|--|---|--|---|--|
| 1 | --.-.-.-.- - (DD.MM.YYYY) | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | |

242. B. Could you please describe to which extent your crop protection program differs compared to the previous season for each growing area of [TARGET CROP]? Please think about differences in products, formulations of products, dosages, techniques...

→ Please describe.

| Growing area A | Growing area B |
|----------------|----------------|
| | |

ONLY IF Q2=48 (Zimbabwe)

234. A. Can you please indicate where you bought your crop protection products for each growing area for [TARGET CROP] this season?

→ Spontaneous

→ Multiple response

| | Growing area A | Growing area B |
|-------------------------|----------------|----------------|
| Cooperative | 1 | 1 |
| Other farmers | 2 | 2 |
| Retailer / manufacturer | 3 | 3 |
| Local distributor | 4 | 4 |
| Local market | 5 | 5 |
| 96. Other specify: | | |
| 97. Other specify: | | |
| 98. Other specify: | | |
| Don't know / no answer | 99 | 99 |

ONLY IF Q2=48 (Zimbabwe)

234. B. Were you able to obtain the crop protection products you needed for each growing area for [TARGET CROP] this season?

→ Single response

| | Growing area A | Growing area B |
|--|----------------|----------------|
| Yes | 1 | 1 |
| No, because I did not have enough money | 2 | 2 |
| No, because not all inputs I wanted were available | 3 | 3 |
| 98. Other. Specify | | |
| Don't know / no answer | 99 | 99 |

382. Please describe per growing area if you performed the activity and how you performed it for [TARGET CROP].

Indicate if you have done this activity or not. If YES: please continue with all other questions related to this activity below.

- A. *How many times did you perform the activity? One performance equals the treatment of the entire area.*
- B. *How many man-days did it take to perform the activity? One man-day equals the amount of labor of one single worker during a day. Please consider all the performances/applications for the activity.*
- C. *Did you use any machinery to perform the activity? Machines rely on non-human energy sources (for example fuel or petrol) If YES; please continue with all the other questions.*
 - *Machines rely on non-human energy sources: for example: fuel or petrol*
- D. *Please tell us which type of machinery you used to complete the activity*
 - *Indicate the type of machinery that you used (for example: chisel plough, tractor, cultivator ...). We are NOT interested in the brand or make.*
- E. *Could you tell us which type of fuel the machine consumes?*
 - *For example: diesel or petrol*

| Growing area A | | | | | |
|-------------------------|---|--|---|---|--|
| | 382_1: Did you perform the activity? 1=Yes 2=No | A. How many times did you perform this activity? | B. How many man-days did it take to perform [INSERT ACTIVITY] | C. Did you use any machinery for [INSERT ACTIVITY] 1= Yes 2= No | If yes on Q382_C D. Type of machinery used If yes on Q382_C E. Type of fuel used 1. Diesel 2. Petrol 99. Do not know |
| 12. Applying pesticides | | | | | |

| Growing area B | | | | | |
|-------------------------|---|--|---|---|--|
| | 382_1: Did you perform the activity? 1=Yes 2=No | A. How many times did you perform this activity? | B. How many man-days did it take to perform [INSERT ACTIVITY] | C. Did you use any machinery for [INSERT ACTIVITY] 1= Yes 2= No | If yes on Q382_C D. Type of machinery used If yes on Q382_C E. Type of fuel used 1. Diesel 2. Petrol 99. Do not know |
| 12. Applying pesticides | | | | | |

| |
|--|
| M. Harvest timing & quality per crop - field crops |
|--|

We will now ask some questions about the crop at harvest, including the harvest timing and yield.

75. What is the final stand - i.e. the number of plants - per m² for each growing area for [TARGET CROP]?

→ Please note down the final stand (number of plants) per m² for each growing area.

| | Growing area A | Growing area B |
|---------------------------|----------------------------|----------------------------|
| Final stand/Plant density |plants/m ² |plants/m ² |

76. Prior to harvest, could you please indicate the percentage of the plot area that is lodged for each growing area for [TARGET CROP]? This is when the stem bends over near the ground level, which implies that this part of the crop is lost.

→ Please note down the percentage for each growing area.

| | Growing area A | Growing area B |
|--------------------|----------------|----------------|
| % plot area lodged |% |% |

243. When was the harvest period for each growing area for [TARGET CROP]?

→ Please write down the harvest period for each growing area.

| | Growing area A | | Growing area B | |
|----------------|----------------|------------------------------------|----------------|------------------------------------|
| Harvest period | A | From __. __. ____ (DD.MM.YYYY) | A | From __. __. ____ (DD.MM.YYYY) |
| | B | Until __. __. ____ (DD.MM.YYYY) | B | Until __. __. ____ (DD.MM.YYYY) |

DO NOT ASK IF Q2=17 (Country = Hungary)

243b. Have you harvested [TARGET CROP] in the same period as last year?

| | Growing area A | Growing area B |
|-----|----------------|----------------|
| Yes | 1 | 1 |
| No | 2 | 2 |

DO NOT ASK IF Q2=17 (Country = Hungary)

**DO NOT ASK IF
IF Q243b = NO**

243c. Please explain why you have harvested in a different period than last year.

→ *Spontaneous.*

| Growing area A | Growing area B |
|----------------|----------------|
| | |

IF Q4=3, 12, 14, 15, 19, 20, OR 21 (BARLEY/PEPPER/RICE/SOYBEAN/TOMATO/WATERMELON/WHEAT)

244. What is the marketable yield that has been achieved for each growing area for [TARGET CROP] in metric tons per hectare?

→ Please write down the measured yield as accurately as possible.

| | Growing area A | Growing area B |
|-------|--------------------|--------------------|
| Yield |metric ton/ha |metric ton/ha |

IF Q4=1; 3; 5; 6; 7; 9; 10; 11; 13; 14; 15; 18; 19; 21 (APPLE/BARLEY/COCOA/COFFEE/CORN/GRAPE/OSR/PEAR/POTATO/RICE/SOYBEAN/SUNFLOWER/TOMATO/WHEAT)

274 B. What was the average moisture content for [TARGET CROP] for each growing area?

→ Please write down the moisture content for each growing area.

| | Growing area A | Growing area B |
|---|----------------|----------------|
| Moisture content immediately after harvesting |% |% |
| Moisture content of marketable yield |% |% |

IF Q4=7 (CORN)

273. B. Please indicate the % of the area that is harvested for grain corn, silage, and cobs.

→ Please note down the percentage. Sum has to be 100%.

| | Growing area A | Growing area B |
|--|----------------|----------------|
| % area for GRAIN CORN harvesting (this means that only the grains are harvested) |% |% |
| % area for SILAGE harvesting (this means that the entire plant is harvested) |% |% |
| % area for COBS harvesting (this means that the entire cobs are harvested, so not the grains only) |% |% |

IF Q4=7 (CORN)

274. What is the yield (marketable yield) that has been achieved for each growing area for corn in metric tons per hectare?

→ Please write down the measured yield as accurately as possible.

| | Growing area A | Growing area B |
|---|--------------------|--------------------|
| Grain yield - Harvested for grains only |metric ton/ha |metric ton/ha |
| Silage yield - Entire plant is harvested and fermented for silage |metric ton/ha |metric ton/ha |
| Cobs yield - The entire cobs are harvested (so not the grains only) |metric ton/ha |metric ton/ha |

IF Q4=13 (POTATO)

299. What is the tuber yield (marketable yield) that has been achieved for each growing area for potato in metric tons per hectare?

→ Please write down the measured yield as accurately as possible.

| | Growing area A | Growing area B |
|-------------|--------------------|--------------------|
| Tuber yield |metric ton/ha |metric ton/ha |

IF Q4=8 (COTTON)

282. What is the fibre / lint yield (marketable yield) that has been achieved for each growing area for cotton in **metric tons per hectare**?

→ Please write down the measured yield as accurate as possible.

| | Growing area A | Growing area B |
|--------------------|----------------------------|----------------------------|
| Fibre / lint yield | metric ton/ha | metric ton/ha |

IF Q4=8, 10 OR 18 (COTTON/OSR/SUNFLOWER)

314. What is the seed yield (marketable yield) that has been achieved for each growing area for [TARGET CROP] in **metric tons per hectare**?

→ Please write down the seed yield for each growing area.

| | Growing area A | Growing area B |
|------------|----------------------------|----------------------------|
| Seed yield | metric ton/ha | metric ton/ha |

4094. Who measured the yield on each of the growing areas?

→ Spontaneous, **multiple response**.

| | Growing area A | Growing area B |
|-----------------------------|----------------|----------------|
| Myself | 1 | 1 |
| Dealer/store | 2 | 2 |
| Manufacturer/representative | 3 | 3 |
| Independent advisor | 4 | 4 |
| Cooperative | 5 | 5 |
| 96. Other specify: | | |
| 97. Other specify: | | |
| 98. Other specify: | | |
| Don't know / no answer | 99 | 99 |

NOT IF Q2=22 and Q4=13 (Japan, potato)

4095. A. Compared to previous year, would you say your yield has ... [READ SCALE]?

→ Please tick what applies.

→ **Single response**.

| | Growing area A | Growing area B |
|------------------------|----------------|----------------|
| Increased | 3 | 3 |
| Remained stable | 2 | 2 |
| Decreased | 1 | 1 |
| Don't know / no answer | 99 | 99 |

NOT IF Q2=22 and Q4=13 (Japan, potato)

4095. B. According to you, why has your yield [INSERT ANSWER ON 4095A]?

→ Spontaneous

| Growing area A | Growing area B |
|----------------|----------------|
| | |

ONLY IF Q2=22 and Q4=13 (Japan, potato)

4095. C. According to you, why has your yield changed as opposed to previous year?

→ Spontaneous

| Growing area A | Growing area B |
|----------------|----------------|
| | |

4096. A. How satisfied are you with your yield this season?

→ READ, *single response*.

→ Please tick what applies.

| | Growing area A | Growing area B |
|------------------------|----------------|----------------|
| Very satisfied | 4 | 4 |
| Somewhat satisfied | 3 | 3 |
| Somewhat unsatisfied | 2 | 2 |
| Very unsatisfied | 1 | 1 |
| Don't know / no answer | 99 | 99 |

4096. B. Can you please explain why you are [INSERT ANSWER on 4096A] with your yield?

→ Spontaneous

| Growing area A | Growing area B |
|----------------|----------------|
| | |

4097. A. How satisfied are you with the price you received on the market?

→ READ, *single response*.

→ Please tick what applies.

| | Growing area A | Growing area B |
|------------------------|----------------|----------------|
| Very satisfied | 4 | 4 |
| Somewhat satisfied | 3 | 3 |
| Somewhat unsatisfied | 3 | 3 |
| Very unsatisfied | 1 | 1 |
| Don't know / no answer | 99 | 99 |

4097. B. Can you please explain why you are [INSERT ANSWER on 4097A] with the price you received?

→ *Spontaneous*

| Growing area A | Growing area B |
|----------------|----------------|
| | |

251. What is the percentage of harvested crop damaged at the time of harvest (total lost - not marketable) for each growing area for your [TARGET CROP]?

→ *Please write down the percentage of harvested crop damaged at harvest for each growing area.*

| | Growing area A | Growing area B |
|--|----------------|----------------|
| Percentage of harvested crop damaged at the time of harvest |% |% |

Q4=12 OR 19 (PEPPER/TOMATO)

4091. What is the average size (diameter) of one tomato/pepper harvested on average?

| | Growing area A | Growing area B |
|-------------------------|----------------|----------------|
| Average size (diameter) | cm | cm |

IF Q4=12 OR 19 (PEPPER/TOMATO)

4092. What is the number of marketable tomatoes/peppers fruits per square meter?

| | Growing area A | Growing area B |
|-----------------------|---------------------------|---------------------------|
| Fruits/m ² | ... Fruits/m ² | ... Fruits/m ² |

IF Q2=20 (ITALY) AND IF Q4= 19 (TOMATO)

4092. C Could you please specify the production cycle (early, medium, long) for each growing area of tomato?

→ *Single response.*

| | Growing area A | Growing area B |
|------------------------|----------------|----------------|
| Early | 1 | 1 |
| Medium | 2 | 2 |
| Long | 3 | 3 |
| Don't know / no answer | 99 | 99 |

IF Q4=8 (COTTON)

284. What is the fibre / lint quality (like fibre strength, fineness ...) for each growing area for cotton?

→ *Please select the fibre quality that applies best.*

→ *Single response.*

| | Growing area A | Growing area B |
|------------------------|----------------|----------------|
| Good quality | 1 | 1 |
| Medium quality | 2 | 2 |
| Low quality | 3 | 3 |
| Don't know / no answer | 99 | 99 |

IF Q4=3 (WHEAT) or 21 (BARLEY)

266 B. Please indicate the protein content level of your yield for each growing area for barley.

→ Please tick what applies.

→ *Single response.*

| | Growing area A | Growing area B |
|---|----------------|----------------|
| Low protein content level (less than 10%) | 1 | 1 |
| Normal protein content level (about 10%) | 2 | 2 |
| High protein content level (above 10%) | 3 | 3 |
| Don't know / no answer | 99 | 99 |

IF Q2=20 (ITALY) AND IF Q4= 19 (TOMATO)

266. C. Please indicate the BRIX content level in percentage (i.e. the final sugar content and the potential alcohol level) of your yield for each growing area for [TARGET CROP].

→ Please write down the percentage for each growing area.

| | Growing area A | Growing area B |
|--------------------------|----------------|----------------|
| BRIX-level in percentage |% |% |

ONLY IF Q2=22 and Q4=13 (Japan, potato)

303. B. Can you please share any feedback about the growth situation of potato during this season?

→ Spontaneous.

→ For example, did you face problems such as sore shin, ...

| Growing area A | Growing area B |
|----------------|----------------|
| | |

ONLY IF Q2=35 and Q4=18 (Russia, sunflower)

2520. A. Are you also cultivating other sunflower varieties?

B. And what is the yield in ton per hectare for these varieties?

→ Please write down the seed variety in column A.

→ Please indicate for each seed variety mentioned in column A, the yield in ton per hectare.

| a. Other sunflower varieties | b. Yield in ton per hectare |
|------------------------------|-----------------------------|
| |ton/ha |
| |ton/ha |
| |ton/ha |
| |ton/ha |
| |ton/ha |

382. Please describe per growing area if you performed the activity and how you performed it for [TARGET CROP].

Indicate if you have done this activity or not. If YES: please continue with all other questions related to this activity below.

- A. How many times did you perform the activity? One performance equals the treatment of the entire area.
- B. How many man-days did it take to perform the activity? One man-day equals the amount of labor of one single worker during a day. Please consider all the performances/applications for the activity.
- C. Did you use any machinery to perform the activity? Machines rely on non-human energy sources (for example fuel or petrol) If YES; please continue with all the other questions.
 - Machines rely on non-human energy sources: for example: fuel or petrol
- D. Please tell us which type of machinery you used to complete the activity
 - Indicate the type of machinery that you used (for example: chisel plough, tractor, cultivator ...). We are NOT interested in the brand or make.
- E. Could you tell us which type of fuel the machine consumes?
 - For example: diesel or petrol

| Growing area A | | | | | | |
|---|---|--|---|---|--|--|
| | 382_1: Did you perform the activity? 1=Yes 2=No | A. How many times did you perform this activity? | B. How many man-days did it take to perform [INSERT ACTIVITY] | C. Did you use any machinery for [INSERT ACTIVITY] 1= Yes 2= No | If yes on Q382_C D. Type of machinery used | If yes on Q382_C E. Type of fuel used 1. Diesel 2. Petrol 99. Do not know |
| 16. Harvesting | | | | | | |
| 17. Post-harvest handling of the harvested crop (incl. dipping) | | | | | | |

| Growing area B | | | | | | |
|---|---|--|---|---|--|--|
| | 382_1: Did you perform the activity? 1=Yes 2=No | A. How many times did you perform this activity? | B. How many man-days did it take to perform [INSERT ACTIVITY] | C. Did you use any machinery for [INSERT ACTIVITY] 1= Yes 2= No | If yes on Q382_C D. Type of machinery used | If yes on Q382_C E. Type of fuel used 1. Diesel 2. Petrol 99. Do not know |
| 16. Harvesting | | | | | | |
| 17. Post-harvest handling of the harvested crop (incl. dipping) | | | | | | |

| |
|---|
| N. Harvest timing & quality per crop - tree crops |
|---|

We will now ask some questions about the crop at harvest, including the harvest timing and yield.

IF Q4=5, 6 OR 9 (COCOA, COFFEE, GRAPES)

201. When did the first trees reach the flowering stage for each growing area for [TARGET CROP]?

→ Please write down the flowering date for each growing area.

| | Growing area A | Growing area B |
|----------------|-----------------------------|-----------------------------|
| Flowering date | --.---.---- (DD.MM.YYYY) | --.---.---- (DD.MM.YYYY) |

IF Q4=5 (COCOA)

212. Rain during flowering damages the flowers. What percentage of the trees was damaged for each growing area for cocoa?

→ Please note down the percentage of trees damaged for each growing area.

| | Growing area A | Growing area B |
|-----------------------------|----------------|----------------|
| Percentage of trees damaged |% | % |

IF Q4=5 (COCOA)

213. What is the average number of green pods per 25 trees (randomly selected) before the green pods become orange for each growing area for cocoa?

→ Please randomly select 25 trees that have pods per growing area. Please note down the average number of green pods of these 25 trees for each growing area.

| | Growing area A | Growing area B |
|---|--------------------------|---------------------------|
| Average number of green pods per 25 trees |green pods/25 trees | green pods/25 trees |

IF Q4=6 (COFFEE)

203. When did the fruit development start for each growing area for coffee?

→ Please write down the fruit development date for each growing area.

| | Growing area A | Growing area B |
|------------------------|-----------------------------|-----------------------------|
| Fruit development date | --.---.---- (DD.MM.YYYY) | --.---.---- (DD.MM.YYYY) |

NOT APPLICABLE IF Q4=9 (GRAPE)

204. Could you please indicate the average number of fruits per tree for each growing area for [TARGET CROP]?

→ Please write down the average number of fruits per tree for each growing area.

| | Growing area A | Growing area B |
|----------------------------------|-----------------|-----------------|
| Average number of fruit per tree |fruit/tree |fruit/tree |

IF Q2=20 (ITALY) and IF Q4=9 (GRAPES) and if CLUSTER 1 OR 2

1020. What is the number of bottles produced per hectare for each growing area for grape?

→ Please write down the bottles produced per hectare for each growing area.

| | Growing area A | Growing area B |
|----------------------------|-----------------|-----------------|
| Number of bottles produced |bottles/ha |bottles/ha |

IF Q2=20 (ITALY) and IF Q4=9 (GRAPES) and if CLUSTER 1 OR 2

1021. What is the number of bottles blocked (no market access) per hectare for each growing area for grape?

→ Please write down the bottles blocked per hectare for each growing area.

| | Growing area A | Growing area B |
|---------------------------|-----------------|-----------------|
| Number of bottles blocked |bottles/ha |bottles/ha |

IF Q2=20 (ITALY) AND Q1010=1 (WINE GRAPE)

266. C. Please indicate the BRIX content level in percentage (i.e. the final sugar content and the potential alcohol level) of your yield for each growing area for [TARGET CROP].

→ Please write down the percentage for each growing area.

| | Growing area A | Growing area B |
|--------------------------|----------------|----------------|
| BRIX-level in percentage |% |% |

IF Q2=13 (FRANCE) AND Q4=9 (GRAPE)

271. What is the sugar content for each growing area for [TARGET CROP]?

→ Please write down the sugar content for each growing area.

| | Growing area A | Growing area B |
|---------------|----------------|----------------|
| Sugar content |% |% |

IF Q2=13 (FRANCE) AND Q4=9 (GRAPE)

271. C1. What is the potential alcohol level in 25cl must, for each growing area of [TARGET CROP]?

→ Please write down the potential alcohol in 25cl must (=freshly pressed juices) for each growing area.

| | Growing area A | Growing area B |
|---------------------------------------|----------------|----------------|
| Potential alcohol level in 25 cl must |% |% |

360. When was the harvest period for each growing area for [TARGET CROP]?

→ Please write down the harvest period for each growing area.

| | Growing area A | | Growing area B | |
|----------------|----------------|--|----------------|--|
| Harvest period | A | From ____ . ____ . ____ (DD.MM.YYYY) | A | From ____ . ____ . ____ (DD.MM.YYYY) |
| | B | Until ____ . ____ . ____ (DD.MM.YYYY) | B | Until ____ . ____ . ____ (DD.MM.YYYY) |

Q360b. Have you harvested [TARGET CROP] in the same period as last year?

| | Growing area A | Growing area B |
|-----|----------------|----------------|
| Yes | 1 | 1 |
| No | 2 | 2 |

If Q360b = NO

Q360c. Please explain why you have harvested in a different period than last year.

→ Spontaneous.

| Growing area A | Growing area B |
|----------------|----------------|
| | |

361. In which months did the harvest peak for each growing area for [TARGET CROP] during this season?

→ Spontaneous, **multiple response**.

→ Please circle the harvest peak months for each growing area.

| | Growing area A | Growing area B |
|------------------------|----------------|----------------|
| January | 1 | 1 |
| February | 2 | 2 |
| March | 3 | 3 |
| April | 4 | 4 |
| May | 5 | 5 |
| June | 6 | 6 |
| July | 7 | 7 |
| August | 8 | 8 |
| September | 9 | 9 |
| October | 10 | 10 |
| November | 11 | 11 |
| December | 12 | 12 |
| Don't know / no answer | 99 | 99 |

NOT APPLICABLE IF Q4=5 OR 6 (COCOA/COFFEE)

351. A. What is the yield (immediately after harvest) that has been achieved for each growing area for [TARGET CROP] in **metric tons per hectare**?

→ Please write down the yield for each growing area.

| | Growing area A | Growing area B |
|-------------------------------------|----------------------------|----------------------------|
| [TARGET CROP] yield (after harvest) | metric ton/ha | metric ton/ha |

IF Q2=20 (ITALY) and IF Q4=9 (GRAPES)

351. B. For the grape variety you are cultivating, what is the maximum yield you may obtain? This refers to the official limits for wine grapes as defined in your country.

→ Please write down the yield for each growing area.

→ Please use -2 if no official yield limits apply.

| | Growing area A | Growing area B |
|------------------------------|----------------------------|----------------------------|
| Maximum yield to be obtained | metric ton/ha | metric ton/ha |

IF Q4=6 (COFFEE)

362. What is the coffee yield (marketable yield - dried beans) that has been achieved for each growing area for coffee in **metric tons per hectare**?

→ Please write down the measured yield as accurate as possible.

| | Growing area A | Growing area B |
|--------------|----------------------------|----------------------------|
| Coffee yield | metric ton/ha | metric ton/ha |

IF Q4=5 (COCOA)

366. What is the yield (marketable yield) that has been achieved for each growing area for cocoa in **metric tons per hectare**?

→ Please write down the yield for each growing area.

| | Growing area A | Growing area B |
|-------|----------------------------|----------------------------|
| Yield | metric ton/ha | metric ton/ha |

IF Q4=5 (COCOA) and Q2=21 (Ivory Coast)

366 C. What is the ANNUAL yield (marketable yield) that has been achieved for each growing area for cocoa in metric tons per hectare for PREVIOUS SEASON. Herby we refer to the yield obtained between October 2016 and September 2017.

→ Please write down the yield for each growing area.

| | Growing area A | Growing area B |
|---|----------------------------|----------------------------|
| Yield PREVIOUS SEASON - <u>October 2016 to September 2017</u> | metric ton/ha | metric ton/ha |

IF Q4=5 (COCOA) and Q2=21 (Ivory Coast)

369 C What is the weight of the dried cocoa yield at the end of the post-harvest process (with humidity close to 8%) for each growing area for cocoa in metric tons per hectare for PREVIOUS SEASON? We refer to the yield obtained between October 2016 and September 2017

→ Please write down the weight of dried cocoa yield for each growing area.

| | Growing area A | Growing area B |
|--|----------------------------|----------------------------|
| Weight dried yield PREVIOUS SEASON - <u>October 2016 to September 2017</u> | metric ton/ha | metric ton/ha |

IF Q4=5 (COCOA)

369. What is the weight of the dried cocoa yield at the end of the post-harvest process (with humidity close to 8%) for each growing area for cocoa in **metric tons per hectare**?

→ Please write down the weight of dried cocoa yield for each growing area.

| | Growing area A | Growing area B |
|--------------------|----------------------------|----------------------------|
| Weight dried yield | metric ton/ha | metric ton/ha |

4094. Who measured the yield on each of the growing areas?

- Spontaneous, *multiple response*.
→ Please tick what applies.

| | Growing area A | Growing area B |
|-----------------------------|----------------|----------------|
| Myself | 1 | 1 |
| Dealer/store | 2 | 2 |
| Manufacturer/representative | 3 | 3 |
| Independent advisor | 4 | 4 |
| Cooperative | 5 | 5 |
| 98. Other specify: | | |
| Don't know / no answer | 99 | 99 |

4095. A. Compared to previous year, would you say your yield has ... [READ SCALE]?

- Please tick what applies. *Single response*.

| | Growing area A | Growing area B |
|------------------------|----------------|----------------|
| Increased | 3 | 3 |
| Remained stable | 2 | 2 |
| Decreased | 1 | 1 |
| Don't know / no answer | 99 | 99 |

4095. B. According to you, why has your yield [INSERT ANSWER ON 4095A]?

- Spontaneous

| Growing area A | Growing area B |
|----------------|----------------|
| | |

4096. A. How satisfied are you with your yield this season?

- READ, *single response*.
→ Please tick what applies.

| | Growing area A | Growing area B |
|------------------------|----------------|----------------|
| Very satisfied | 4 | 4 |
| Somewhat satisfied | 3 | 3 |
| Somewhat unsatisfied | 3 | 3 |
| Very unsatisfied | 1 | 1 |
| Don't know / no answer | 99 | 99 |

4096. B. Can you please explain why you are [INSERT ANSWER on 4096A]?

→ Spontaneous

| Growing area A | Growing area B |
|----------------|----------------|
| | |

351 C. What percentage of the harvested yield is immediately sold and/or stored?

→ Please write down the percentage for each growing area. The sum should be 100%.

| | Growing area A | Growing area B |
|-------------------------|----------------|----------------|
| Immediately sold |% |% |
| Stored |% |% |
| 98. Other. Specify: ... |% |% |
| | 100% | 100% |

INTERVIEWER - PLEASE READ: In the following questions, we will ask some questions that concern the harvest of the previous season (2017).

IF Q4=1 OR 11 (APPLE/PEAR)

351. B. For the harvest of the previous season (2017), what was the yield (after storage) that has been achieved for each growing area?

→ Please write down the apple yield for each growing area.

| | Growing area A | Growing area B |
|-----------------------|---------------------|---------------------|
| Yield (after storage) | metric ton/ha | metric ton/ha |

IF Q4=1 (APPLE)

352. A. For the harvest of the previous season (2017), could you please indicate the after storage harvest in ton/ha for each of the apple sizes that apply for the growing area for apple?

→ Please write down the harvest in metric ton/ha for each apple size that applies.

| Size in millimeter | Growing area A |
|--------------------|---------------------|
| 60-65 | metric ton/ha |
| 65-70 | metric ton/ha |
| 70-75 | metric ton/ha |
| 75-80 | metric ton/ha |
| 80-85 | metric ton/ha |
| rot | metric ton/ha |
| total | metric ton/ha |

IF Q4=11 (PEAR)

352. B. For the harvest of the previous season (2017), could you please indicate the after storage harvest in ton/ha for each of the pear sizes that apply for the growing area for pear?

→ Please write down the harvest in metric ton/ha for each pear size that applies.

| Size in millimeter | Growing area B |
|--------------------|---------------------|
| 45-50 | metric ton/ha |
| 50-55 | metric ton/ha |
| 55-60 | metric ton/ha |
| 60-65 | metric ton/ha |
| 65-70 | metric ton/ha |
| 70-75 | metric ton/ha |
| 75-80 | metric ton/ha |
| 80-85 | metric ton/ha |
| rot | metric ton/ha |
| total | metric ton/ha |

IF Q4=1 OR 11 (APPLE/PEAR)

353 B. For the harvest of the previous season (2017), what was the price per ton per buyer that has been obtained for each growing area for [TARGET CROP]?

→ Please write down the percentage of the yield that each buyer bought and the price they have paid.

→ The sum of the percentages cannot exceed 100%.

| | Growing area A | | Growing area B | |
|-----------------------------------|----------------|----------------|----------------|----------------|
| Buyer 1: | a. ...% | b. \$/ton | a. ...% | b. \$/ton |
| Buyer 2: | a. ...% | b. \$/ton | a. ...% | b. \$/ton |
| Buyer 3: | a. ...% | b. \$/ton | a. ...% | b. \$/ton |
| Buyer 4: | a. ...% | b. \$/ton | a. ...% | b. \$/ton |
| Buyer 5: | a. ...% | b. \$/ton | a. ...% | b. \$/ton |
| Harvest not yet sold/not yet paid | -2 | -2 | -2 | -2 |
| Don't know/no answer | -1 | -1 | -1 | -1 |

IF Q4=1 OR 11 (APPLE/PEAR)

354. For the harvest of the previous season (2017), which percentage of the yield of each growing area for apple could be sold and which percentage was used in the processing industry ?

→ Please give the percentage of the yield that can be sold and the percentage that is used in the processing industry. The sum should be 100%.

| | Growing area A | Growing area B |
|---------------------------------------|----------------|----------------|
| 1. Percentage salable product | ...% | ...% |
| 2. Percentage for processing industry | ...% | ...% |
| | 100% | 100% |

INTERVIEWER NOTE: Please proceed with the questions about the current season.

IF Q4=1 OR 11 (APPLE/PEAR)

3540. What is the percentage of fruits damaged at harvest (total lost - not marketable) for each growing area?

→ Please write down the percentage of fruits damaged at harvest for each growing area.

| | Growing area A | Growing area B |
|---|----------------|----------------|
| Percentage of fruits damaged at harvest |% |% |

4097. A. How satisfied are you with the price you received on the market?

→ READ, **single response**.

→ Please tick what applies.

| | Growing area A | Growing area B |
|------------------------|----------------|----------------|
| Very satisfied | 4 | 4 |
| Somewhat satisfied | 3 | 3 |
| Somewhat unsatisfied | 3 | 3 |
| Very unsatisfied | 1 | 1 |
| Don't know / no answer | 99 | 99 |

4097. B. Can you please explain why you are [INSERT ANSWER on 4097A] with the price you received?

→ Spontaneous

| Growing area A | Growing area B |
|----------------|----------------|
| | |

IF Q4≠1; 11 (NOT APPLE OR PEAR)

3630. What is the percentage fruit losses/damaged for each growing area for [TARGET CROP]?

→ Please write down the percentage for each growing area.

| | Growing area A | Growing area B |
|---------------------------------|----------------|----------------|
| Percentage fruit losses/damaged |% |% |

IF Q3630 > 0%

251. B Can you please indicate for each growing area which factors contributed to this percentage of harvested crop damaged?

→ Spontaneous.

| Growing area A | Growing area B |
|----------------|----------------|
| | |

382. Please describe per growing area if you performed the activity and how you performed it for [TARGET CROP].

Indicate if you have done this activity or not. If YES: please continue with all other questions related to this activity below.

- A. *How many times did you perform the activity? One performance equals the treatment of the entire area.*
- B. *How many man-days did it take to perform the activity? One man-day equals the amount of labor of one single worker during a day. Please consider all the performances/applications for the activity.*
- C. *Did you use any machinery to perform the activity? Machines rely on non-human energy sources (for example fuel or petrol) If YES; please continue with all the other questions.*
 - *Machines rely on non-human energy sources: for example: fuel or petrol*
- D. *Please tell us which type of machinery you used to complete the activity*
 - *Indicate the type of machinery that you used (for example: chisel plough, tractor, cultivator ...). We are NOT interested in the brand or make.*
- E. *Could you tell us which type of fuel the machine consumes?*
 - *For example: diesel or petrol*

| Growing area A | | | | | | |
|----------------|---|--|---|---|--|--|
| | 382_1: Did you perform the activity? 1=Yes 2=No | A. How many times did you perform this activity? | B. How many man-days did it take to perform [INSERT ACTIVITY] | C. Did you use any machinery for [INSERT ACTIVITY] 1= Yes 2= No | If yes on Q382_C D. Type of machinery used | If yes on Q382_C E. Type of fuel used 1. Diesel 2. Petrol 99. Do not know |
| 14. Pruning | | | | | | |
| 16. Harvesting | | | | | | |

| Growing area B | | | | | | |
|----------------|---|--|---|---|--|--|
| | 382_1: Did you perform the activity? 1=Yes 2=No | A. How many times did you perform this activity? | B. How many man-days did it take to perform [INSERT ACTIVITY] | C. Did you use any machinery for [INSERT ACTIVITY] 1= Yes 2= No | If yes on Q382_C D. Type of machinery used | If yes on Q382_C E. Type of fuel used 1. Diesel 2. Petrol 99. Do not know |
| 14. Pruning | | | | | | |
| 16. Harvesting | | | | | | |

Y. After harvest

We will now ask some questions about the crop after harvest, including what you do with it and possible losses due to transportation or storage issues.

246. What percentage of the harvest of your [TARGET CROP] of each growing area is used for each purpose?

→ Please note down what applies for each growing area.

→ The sum of the percentages should add up to 100%.

| | Growing area A | Growing area B |
|---------------------------------------|----------------|----------------|
| 1. Own consumption - Self-subsistence |% | % |
| 2. Feeding own livestock | % | % |
| 3. Harvest sold | % | % |
| | 100% | 100% |

4000b. Can you please tell us what are your main sources for selling the harvest for each growing area for [TARGET CROP]?

→ Spontaneous. *Multiple response.*

| | Growing area A | Growing area B |
|--|----------------|----------------|
| I sell it on the local market | 1 | 1 |
| I sell it to a trader | 2 | 2 |
| I sell it to a wholesaler | 3 | 3 |
| I sell it to a feed processing plant | 4 | 4 |
| I sell it to a cooperative I am part of | 5 | 5 |
| I sell it under a contract This means that a grower already signed a contract for selling, BEFORE harvesting. Under contract, the grower knows the selling price beforehand. The contract might include requirements, e.g. on quality | 6 | 6 |
| I sell it to a government owned rural collection center | 7 | 7 |
| 96. Other. Specify 1: | | |
| 97. Other. Specify 2: | | |
| 98. Other. Specify 3: | | |
| Don't know / no answer | 99 | 99 |

4001b. What is the percentage of crop lost in-between harvest and selling ('marketable yield') for each growing area of [TARGET CROP]?

→ Please write down the percentage of crop lost in-between harvest and selling for each growing area (=the percentage difference between the final, marketable yield, and the yield directly at harvesting).

| | Growing area A | Growing area B |
|--|----------------|----------------|
| % crop lost between harvest and selling ('marketable yield') |% |% |

IFQ4001b = > 0%

4001c. According to you, what are the main reasons for losing part of the crop between harvest and selling ('marketable yield') for each growing area of [TARGET CROP]? Please split this up in percentages.

→ Spontaneous. **Multiple response.** Sum of the percentages should add up to 100%.

| | Growing area A | Growing area B |
|---|----------------|----------------|
| Losses or damage during transportation to farm/farm storage | ... % | ... % |
| Losses or damage during transportation to market/market storage | ... % | ... % |
| Pest or disease infestation during storage | ... % | ... % |
| Shrink loss during storage | ... % | ... % |
| Decay during storage | ... % | ... % |
| Drying | ... % | ... % |
| Grinding to feed | ... % | ... % |
| 96. Other. Specify 1: ... | ... % | ... % |
| 97. Other. Specify 2: ... | ... % | ... % |
| 98. Other. Specify 3: ... | ... % | ... % |
| | 100 % | 100% |

4002. Did you take measures to prevent post-harvest loss for each growing area of [TARGET CROP]?

| | Growing area A | Growing area B |
|-----|----------------|----------------|
| Yes | 1 | 1 |
| No | 2 | 2 |

IF Q2=20 (ITALY) AND IF Q4= 19 (TOMATO)

4002. B Please indicate the tare post-harvest in percentage (i.e. the net content that is marketable) for each growing area of [TARGET CROP].

→ Please write down the percentage of tare post-harvest for each growing area

| | Growing area A | Growing area B |
|---------------------------------|----------------|----------------|
| Percentage of tare post-harvest |% |% |

IF Q4002=1 (measures taken to prevent post-harvest loss)

4003. Which measures did you take to prevent post-harvest loss for each growing area of [TARGET CROP]?

→ Please describe the measures that you take.

| Growing area A | Growing area B |
|----------------|----------------|
| | |

| | |
|--|--|
| | |
|--|--|

DO NOT ASK IF Q4=14 (RICE)

Q7013. After harvesting, some parts of [TARGET CROP] ("crop residue") remain on the field / in the orchard.
How do you generally deal with this?

→ READ, *single response*.

| | Growing area A | Growing area B |
|---|----------------|----------------|
| I leave the crop residue on the field | 1 | 1 |
| I burn the crop residue | 2 | 2 |
| I remove the crop residue and leave it untreated in heaps or pits | 3 | 3 |
| I remove the crop residue and use it as compost | 4 | 4 |
| I remove the crop residue and use a mechanical system ("forced aeration") for composting | 5 | 5 |
| I remove the crop residue and export it off farm | 6 | 6 |
| 98: Other. Specify: ... | | |
| Don't know / no answer | 99 | 99 |

PART VI - OTHER INPUTS - AFTER HARVEST

A. Input costs

We will now ask some questions about the revenue of your crop as well as the costs of the inputs you use to produce your crop.

377. What is the estimated revenue in USD per hectare for each growing area of [TARGET CROP]?

→ Please write down in \$/ha.

→ Interviewer note: this is not referring to the actual profit but to the total REVENUE.

| | Growing area A | Growing area B |
|------------------------|----------------|----------------|
| Estimated revenue | ... \$/ha | ... \$/ha |
| Don't know / no answer | -1 | -1 |

IF Q377= -1 (don't know the estimated revenue for growing area A or B)

378. Could you please indicate the estimated revenue for [TARGET CROP] in general?

→ Please write down the general estimated revenue in \$/ha.

| | |
|------------------------|-----------|
| Estimated revenue | ... \$/ha |
| Don't know / no answer | -1 |

379. How would you rate your profitability for each growing area for [TARGET CROP] compared to past season?

→ READ, single response.

| | Growing area A | Growing area B |
|------------------------|----------------|----------------|
| Very high | 5 | 5 |
| High | 4 | 4 |
| Average | 3 | 3 |
| Low | 2 | 2 |
| Very low | 1 | 1 |
| Don't know / no answer | 99 | 99 |

IF Q2=20 (ITALY) AND IF Q379 = 5, 4, 3, 2 or 1

379. A. Can you please explain your answer for each growing area of [TARGET CROP]?

→ Spontaneous

| Growing area A | Growing area B |
|----------------|----------------|
| | |

380. What is your total input cost for each growing area of [TARGET CROP] from first field preparation until harvest? Please consider **trees/seeds**, fertilizers, pesticides, labor, machinery, water use, fuel, electricity, gas.

→ Please write down in **\$/ha**.

→ Please check that total revenue (Q377) minus total input costs (Q380) is larger than zero. If not, this implies that the grower is working at a loss. Please check with the grower immediately if this is true.

| | Growing area A | Growing area B |
|------------------|------------------|------------------|
| Total input cost | ... \$/ha | ... \$/ha |

IF Q2=20 (Country = Italy) OR Q2=17 (Country=Hungary) DO NOT ASK

4111. And how would you split this out in actual costs for each category in terms of importance of the total input cost for each growing area for [TARGET CROP]?

→ READ. Please indicate the actual cost for each category.

→ The sum should add up to the total cost indicated in Q380.

| | Growing area A | Growing area B |
|--|--------------------|--------------------|
| 1. Trees/Seeds | ... \$ / ha | ... \$ / ha |
| 2. Fertilizers | ... \$ / ha | ... \$ / ha |
| 3. Pesticides | ... \$ / ha | ... \$ / ha |
| 4. Labor <i>Please take into account own labor hours as well</i> | ... \$ / ha | ... \$ / ha |
| 5. Machinery | ... \$ / ha | ... \$ / ha |
| 6. Water use | ... \$ / ha | ... \$ / ha |
| 7. Fuel | ... \$ / ha | ... \$ / ha |
| 8. Electricity | ... \$ / ha | ... \$ / ha |
| 9. Gas | ... \$ / ha | ... \$ / ha |
| 10. Rent/loans for growing areas | ... \$ / ha | ... \$ / ha |
| 98. Other specify: | ... \$ / ha | ... \$ / ha |
| Don't know / no answer | -1 | -1 |

ONLY ASK IF Q2=17 (Country = Hungary)

4111. And how would you split this out in actual costs for each category in terms of importance of the total input cost for each growing area for CORN?

→ READ. Please indicate the actual cost for each category.

→ The sum should add up to the total cost indicated in Q380.

| | Growing area A | Growing area B |
|---|----------------|----------------|
| 1. Seeds | ... HUF / ha | ... HUF / ha |
| 2. Fertilizers | ... HUF / ha | ... HUF / ha |
| 4. Labor <i>Please take into account own labor hours as well</i> | ... HUF / ha | ... HUF / ha |
| 5. Machinery | ... HUF / ha | ... HUF / ha |
| 6. Water use | ... HUF / ha | ... HUF / ha |
| 7. Fuel | ... HUF / ha | ... HUF / ha |
| 10. Rent/loans for growing areas | ... HUF / ha | ... HUF / ha |
| 11. Fungicides | ... HUF / ha | ... HUF / ha |
| 12. Herbicides | ... HUF / ha | ... HUF / ha |
| 13. Insecticides | ... HUF / ha | ... HUF / ha |
| 14. Drying | ... HUF / ha | ... HUF / ha |
| 98. Other specify: | ... HUF / ha | ... HUF / ha |
| Don't know / no answer | -1 | -1 |

IF Q2=20 (Country = Italy) OR Q2=17 (Country=Hungary) DO NOT ASK

IF Q4111=-1 (don't know how to split up in actual costs)

381. And how would you split this out in percentages for each category in terms of importance of the total input cost for each growing area for [TARGET CROP]?

→ Please indicate the percentage for each category. The sum should add up to 100%.

| | Growing area A | Growing area B |
|---|----------------|----------------|
| 1. Trees/Seeds | ... % | ... % |
| 2. Fertilizers | ... % | ... % |
| 3. Pesticides | ... % | ... % |
| 4. Labor <i>Please take into account own labor hours as well</i> | ... % | ... % |
| 5. Machinery | ... % | ... % |
| 6. Water use | ... % | ... % |
| 7. Fuel | ... % | ... % |
| 8. Electricity | ... % | ... % |
| 9. Gas | ... % | ... % |
| 10. Rent/loans for growing areas | ... % | ... % |
| 98. Other specify: | ... % | ... % |
| Don't know / no answer | -1 | -1 |

ONLY ASK IF Q2=17 (Country = Hungary)

IF Q4111=-1 (don't know how to split up in actual costs)

382. And how would you split this out in percentages for each category in terms of importance of the total input cost for each growing area for CORN?

→ Please indicate the percentage for each category. The sum should add up to 100%.

| | Growing area A | Growing area B |
|---|----------------|----------------|
| 1. Seeds | ... % | ... % |
| 2. Fertilizers | ... % | ... % |
| 4. Labor <i>Please take into account own labor hours as well</i> | ... % | ... % |
| 5. Machinery | ... % | ... % |
| 6. Water use | ... % | ... % |
| 7. Fuel | ... % | ... % |
| 10. Rent/loans for growing areas | ... % | ... % |
| 11. Fungicides | ... % | ... % |
| 12. Herbicides | ... % | ... % |
| 13. Insecticides | ... % | ... % |
| 14. Drying | ... % | ... % |
| 98. Other specify: | ... % | ... % |
| Don't know / no answer | -1 | -1 |

B. Abiotic stress

We will now ask some questions about external stress factors you faced during the season.

4121. In general for the whole cultivation period, could you please rate the weather conditions for each growing area on the [TARGET CROP]?

→ READ, *single response*.

→ From first soil preparation until end of harvest.

| | Growing area A | Growing area B |
|-----------------------------------|----------------|----------------|
| No favorable weather conditions | 1 | 1 |
| Normal weather conditions | 2 | 2 |
| Very favorable weather conditions | 3 | 3 |
| Don't know / no answer | 99 | 99 |

IF Q4121=1 (no favorable weather conditions)

387. What was the impact for each growing area on the [TARGET CROP]?

→ Spontaneous, *multiple response*.

→ Please tick what applies. Note down other if not in list.

| | Growing area A | Growing area B |
|---------------------------|----------------|----------------|
| Reduced yield | 1 | 1 |
| Reduced yield quality | 2 | 2 |
| No impact | 90 | 90 |
| 96. Other. Specify 1: ... | 96 | 96 |
| 97. Other. Specify 2: ... | 97 | 97 |
| 98. Other. Specify 3: ... | 98 | 98 |
| Don't know / no answer | 99 | 99 |

388. Would you say the rain level during the season was ... [READ] for each growing area?

→ READ, *single response*.

→ Please tick what applies.

| | Growing area A | Growing area B |
|--------------------------|----------------|----------------|
| A lot less than usual | 1 | 1 |
| Somewhat less than usual | 2 | 2 |
| The same as usual | 3 | 3 |
| Somewhat more than usual | 4 | 4 |
| A lot more than usual | 5 | 5 |
| 98. Other. Specify: | ... | ... |
| Don't know / no answer | 99 | 99 |

IF Q388=1 OR 2 (less rain during the season)

388 B. You mentioned you had less rainfall this season than usual. Was this problematic?

| | Growing area A | Growing area B |
|-----|----------------|----------------|
| Yes | 1 | 1 |
| No | 2 | 2 |

IF Q388B=1 (low rainfall level was problematic)

388 C. Please describe during which growth stage this problem took place.

→ Please specify all applicable growth stages.

→ **Multiple response.**

| Growing area A | | Growing area B | |
|---------------------|--|---------------------|--|
| Growth stage 1: ... | | Growth stage 1: ... | |
| Growth stage 2: ... | | Growth stage 2: ... | |
| Growth stage 3: ... | | Growth stage 3: ... | |

IF Q388=4 OR 5 (more rain during the season)

388 D. You mentioned you had more rainfall this season than usual. Was this **problematic**?

| | Growing area A | Growing area B |
|-----|----------------|----------------|
| Yes | 1 | 1 |
| No | 2 | 2 |

IF Q388D=1 (high rainfall level was problematic)

388 E. Please describe during which growth stage this problem took place.

→ Please specify all applicable growth stages.

→ **Multiple response.**

| Growing area A | | Growing area B | |
|---------------------|--|---------------------|--|
| Growth stage 1: ... | | Growth stage 1: ... | |
| Growth stage 2: ... | | Growth stage 2: ... | |
| Growth stage 3: ... | | Growth stage 3: ... | |

3880. Would you say the temperature during the season was ... [READ] for each growing area?

→ READ, **single response.**

→ Please tick what applies.

| | Growing area A | Growing area B |
|----------------------------|----------------|----------------|
| A lot lower than usual | 1 | 1 |
| Somewhat lower than usual | 2 | 2 |
| The same as usual | 3 | 3 |
| Somewhat higher than usual | 4 | 4 |
| A lot higher than usual | 5 | 5 |
| 98. Other. Specify: | ... | ... |
| Don't know / no answer | 99 | 99 |

IF Q3880=1 OR 2 (lower temperature during the season)

3880 B. You mentioned you had lower temperatures this season than usual. Was this problematic?

| | Growing area A | Growing area B |
|-----|----------------|----------------|
| Yes | 1 | 1 |
| No | 2 | 2 |

IF Q3880B=1 (low temperature was problematic)

3880 C. Please describe during which growth stage this problem took place.

→ Please specify all applicable growth stages.

→ *Multiple response.*

| Growing area A | | Growing area B | |
|---------------------|--|---------------------|--|
| Growth stage 1: ... | | Growth stage 1: ... | |
| Growth stage 2: ... | | Growth stage 2: ... | |
| Growth stage 3: ... | | Growth stage 3: ... | |

IF Q3880=4 OR 5 (higher temperature during the season)

3880 D. You mentioned you had higher temperatures this season than usual. Was this problematic?

| | Growing area A | Growing area B |
|-----|----------------|----------------|
| Yes | 1 | 1 |
| No | 2 | 2 |

IF Q3880D=1 (high temperature was problematic)

3880 E. Please describe during which growth stage this problem took place.

→ Please specify all applicable growth stages.

→ *Multiple response.*

| Growing area A | | Growing area B | |
|---------------------|--|---------------------|--|
| Growth stage 1: ... | | Growth stage 1: ... | |
| Growth stage 2: ... | | Growth stage 2: ... | |
| Growth stage 3: ... | | Growth stage 3: ... | |

C. Irrigation

DO NOT ASK CHAPTER ON IRRIGATION IF Q2=17 (Country = Hungary)

389. What is the MAIN water source of each growing area of [TARGET CROP] during this season? Only one answer possible.

→ READ. Note down other if not in list.

→ *Single response.*

| | Growing area A | Growing area B |
|---|----------------|----------------|
| Irrigated using irrigation equipment (e.g. rain, ponds, river, tap water,...) | 1 | 1 |
| Rain-fed (no equipment, only natural rainfall) | 2 | 2 |
| Swamp/wetland | 3 | 3 |
| 98. Other. Specify 1: | ... | ... |
| Don't know / no answer | 99 | 99 |

IF Q389=1 (if irrigation)

389. **B. Which water source** has been used for irrigation?

→ Spontaneous. Note down other if not in list. *Multiple response*

| | Growing area A | Growing area B |
|--------------------------------|----------------|----------------|
| Private connection to pipeline | 1 | 1 |
| Private well | 2 | 2 |
| Private borehole | 3 | 3 |
| Public river, stream | 4 | 4 |
| Public lake, pond | 5 | 5 |
| Rainwater in a tank | 6 | 6 |
| Water vendor | 7 | 7 |
| 96. Other specify 1: | | |
| 97. Other specify 2: | | |
| 98. Other specify 3: | | |
| Don't know / no answer | 99 | 99 |

IF Q389=1 (if irrigation)

389. **C. Do you use a water meter** to measure the amount of water used for irrigation for each growing area for [TARGET CROP]?

| | Growing area A | Growing area B |
|-----|----------------|----------------|
| Yes | 1 | 1 |
| No | 2 | 2 |

IF Q389=1 (if irrigation)

Q7015 . When was the irrigation period for each growing area for [TARGET CROP]?

→ Please write down the irrigation period for each growing area.

| | Growing area A | | Growing area B | |
|-------------------|----------------|---------------------------------------|----------------|---------------------------------------|
| Irrigation period | A | From ____ . ____ . ____ (DD.MM.YYYY) | A | From ____ . ____ . ____ (DD.MM.YYYY) |
| | B | Until ____ . ____ . ____ (DD.MM.YYYY) | B | Until ____ . ____ . ____ (DD.MM.YYYY) |

IF Q389=1 (if irrigation)

390. What is the number of days you have been irrigating each growing area of [TARGET CROP]?

→ Please write down the number of days.

| | Growing area A | Growing area B |
|------------------------------|----------------|----------------|
| Number of days of irrigation | ...days | ...days |

IF Q389=1 (if irrigation)

391. What is the average amount of hours per day you have been irrigating each growing area of [TARGET CROP]?

→ Please write down the average amount of hours per day.

| | Growing area A | Growing area B |
|---------------------------------|----------------|----------------|
| Average amount of hours per day | ...hours/day | ...hours/day |

IF Q389=1 (if irrigation)

392. What is the amount of liters that is discharged per hour on each growing area of [TARGET CROP]?

→ Please write down the average amount of liters per hour.

→ Interviewer instruction: Please ask for the type of pump the grower used, as this indicated the amount of liters discharged per hour.

| | Growing area A | Growing area B |
|-----------------------------------|----------------|----------------|
| Average amount of liters per hour | ...L/hour | ...L/hour |

IF Q389=1 (if irrigation)

Q7016. Please indicate what percentage of the area is irrigated for each growing area of [TARGET CROP].

→ Please note the actual percentage of irrigated land as detailed as possible.

| | Growing area A | Growing area B |
|--|----------------|----------------|
| Percentage of the area that is irrigated | ... % | ... % |

IF Q389=1 (if irrigation)

Q7017. Which method of irrigation did you apply for each growing area of [TARGET CROP]?

→ *Single response*

| | Growing area A | Growing area B |
|--|----------------|----------------|
| Flooding the area | 1 | 1 |
| Propelling water as rain | 2 | 2 |
| Dispersing drop by drop to the base of the plant | 3 | 3 |
| Micro-sprinklers that create a fog | 4 | 4 |
| Pivot irrigation system | 5 | 5 |
| 98: Other. Specify ... | 98 | 98 |
| Don't know / no answer | 99 | 99 |

382. Please describe per growing area if you performed the activity and how you performed it for [TARGET CROP].

Indicate if you have done this activity or not. If YES: please continue with all other questions related to this activity below.

- A. *How many times did you perform the activity? One performance equals the treatment of the entire area.*
- B. *How many man-days did it take to perform the activity? One man-day equals the amount of labor of one single worker during a day. Please consider all the performances/applications for the activity.*
- C. *Did you use any machinery to perform the activity? Machines rely on non-human energy sources (for example fuel or petrol) If YES; please continue with all the other questions.*
 - *Machines rely on non-human energy sources: for example: fuel or petrol*
- D. *Please tell us which type of machinery you used to complete the activity*
 - *Indicate the type of machinery that you used (for example: chisel plough, tractor, cultivator ...). We are NOT interested in the brand or make.*
- E. *Could you tell us which type of fuel the machine consumes?*
 - *For example: diesel or petrol*

| Growing area A | | | | | |
|---|--|---|---|--|--|
| 382_1: Did you perform the activity? 1=Yes 2=No | A. How many times did you perform this activity? | B. How many man-days did it take to perform [INSERT ACTIVITY] | C. Did you use any machinery for [INSERT ACTIVITY] 1= Yes 2= No | If yes on Q382_C D. Type of machinery used | If yes on Q382_C E. Type of fuel used 1. Diesel 2. Petrol 99. Do not know |
| 13. Irrigating | | | | | |

| Growing area B | | | | | |
|---|--|---|---|--|--|
| 382_1: Did you perform the activity? 1=Yes 2=No | A. How many times did you perform this activity? | B. How many man-days did it take to perform [INSERT ACTIVITY] | C. Did you use any machinery for [INSERT ACTIVITY] 1= Yes 2= No | If yes on Q382_C D. Type of machinery used | If yes on Q382_C E. Type of fuel used 1. Diesel 2. Petrol 99. Do not know |
| 13. Irrigating | | | | | |

PART VII - FEEDBACK

IF Q397_NEW=1 or 2 (have received a recommended crop program and/or recommendations)

397. G1. To which extent did you follow this crop program **and/or recommendations** for each growing area of [TARGET CROP]?

→ READ, *single response*.

| | Growing area A | Growing area B |
|------------------------|----------------|----------------|
| Completely followed | 1 | 1 |
| Partially followed | 2 | 2 |
| Not followed at all | 3 | 3 |
| Don't know / no answer | 99 | 99 |

IF Q397_NEW=1 or 2 (have received a recommended crop program and/or recommendations)

399. Please explain why you follow or do not follow the **crop program and/or recommendations**.

→ Please write down why you have or have not followed the **crop program and/or recommendations**.

| Growing area A | Growing area B |
|----------------|----------------|
| | |

IF Q397_NEW=1 or 2 (have received a recommended crop program and/or recommendations)

399. C. How satisfied are you with the **crop program and/or recommendations** for each growing area of [TARGET CROP]?

→ READ, *single response*.

| | Growing area A | Growing area B |
|------------------------|----------------|----------------|
| Very satisfied | 4 | 4 |
| Rather satisfied | 3 | 3 |
| Rather unsatisfied | 2 | 2 |
| Not satisfied at all | 1 | 1 |
| Don't know / no answer | 99 | 99 |

IF Q399C=1 OR 2 OR 3 OR 4

399. D. Please explain your answer for each growing area of [TARGET CROP]?

→ Please explain.

| Growing area A | Growing area B |
|----------------|----------------|
| | |

399. E. What is your opinion on The Good Growth Plan?

→ Interviewer note: Please make sure grower knows that this study is part of The Good Growth Plan. Refer again to the brochure that was handed over to the grower at the beginning of the interview.

→ Please describe.

| |
|--|
| |
|--|

ONLY IF Q2=22 and Q4=13 (Japan, potato)

IF Q397_NEW=1 (have received a recommended crop program) and IF REFERENCE FARM

399. E1. What is your opinion about the in-furrow technology you applied?

→ Please describe.

| |
|--|
| |
|--|

4008. How did the result of the farmer report influence decisions taken during this season?

→ Please explain what you did differently.

| |
|--|
| |
|--|

This completes the data collection guide. Thank you for your cooperation!