

# Good Growth Plan 2015

**Syngenta**

report\_generated\_on: January 27, 2023

visit\_data\_catalog\_at: <https://microdata.worldbank.org/index.php>

## Identification

### SURVEY ID NUMBER

DEU\_2015\_GGP-P\_v01\_M\_v01\_A\_OCS

### TITLE

Good Growth Plan 2015

### COUNTRY/ECONOMY

Name	Country code
Germany	DEU

### STUDY TYPE

Agricultural Survey [ag/oth]

### ABSTRACT

Syngenta is committed to increasing crop productivity and to using limited resources such as land, water and inputs more efficiently. Since 2014, Syngenta has been measuring trends in agricultural input efficiency on a global network of real farms. The Good Growth Plan dataset shows aggregated productivity and resource efficiency indicators by harvest year. The data has been collected from more than 4,000 farms and covers more than 20 different crops in 46 countries. The data (except USA data and for Barley in UK, Germany, Poland, Czech Republic, France and Spain) was collected, consolidated and reported by Kynetec (previously Market Probe), an independent market research agency. It can be used as benchmarks for crop yield and input efficiency.

### KIND OF DATA

Sample survey data [ssd]

### UNIT OF ANALYSIS

Agricultural holdings

## Scope

### NOTES

Data was collected on the usage of inputs, such as crop protection products, chemical fertilizer, seeding rates, labor hours, machinery usage hours, and marketable crop yield on a per hectare basis.

### TOPICS

Topic	Vocabulary
Agriculture & Rural Development	FAO
Environment	FAO
Agricultural input efficiency	FAO

### KEYWORDS

Keyword
Input efficiency
Crop productivity
Agriculture
The Good Growth Plan

## Coverage

### GEOGRAPHIC COVERAGE

National coverage

## Producers and sponsors

### PRIMARY INVESTIGATORS

Name
Syngenta

### PRODUCERS

Name	Role
Kynetec	Technical assistance

## Sampling

### SAMPLING PROCEDURE

#### A. Sample design

Farms are grouped in clusters, which represent a crop grown in an area with homogenous agro- ecological conditions and include comparable types of farms. The sample includes reference and benchmark farms. The reference farms were selected by Syngenta and the benchmark farms were randomly selected by Kynetec within the same cluster.

#### B. Sample size

Sample sizes for each cluster are determined with the aim to measure statistically significant increases in crop efficiency over time. This is done by Kynetec based on target productivity increases and assumptions regarding the variability of farm metrics in each cluster. The smaller the expected increase, the larger the sample size needed to measure significant differences over time. Variability within clusters is assumed based on public research and expert opinion. In addition, growers are also grouped in clusters as a means of keeping variances under control, as well as distinguishing between growers in terms of crop size, region and technological level. A minimum sample size of 20 interviews per cluster is needed. The minimum number of reference farms is 5 of 20. The optimal number of reference farms is 10 of 20 (balanced sample).

#### C. Selection procedure

The respondents were picked randomly using a “quota based random sampling” procedure. Growers were first randomly selected and then checked if they complied with the quotas for crops, region, farm size etc. To avoid clustering high number of interviews at one sampling point, interviewers were instructed to do a maximum of 5 interviews in one village.

## data\_collection

### DATES OF DATA COLLECTION

Start	End
2015	2015

### DATA COLLECTION MODE

Face-to-face [f2f]

## questionnaires

### QUESTIONNAIRES

Data collection tool for 2019 covered the following information:

**(A) PRE- HARVEST INFORMATION****PART I: Screening****PART II: Contact Information****PART III: Farm Characteristics**

- a. Biodiversity conservation
- b. Soil conservation
- c. Soil erosion
- d. Description of growing area
- e. Training on crop cultivation and safety measures

**PART IV: Farming Practices - Before Harvest**

- a. Planting and fruit development - Field crops
- b. Planting and fruit development - Tree crops
- c. Planting and fruit development - Sugarcane
- d. Planting and fruit development - Cauliflower
- e. Seed treatment

**(B) HARVEST INFORMATION****PART V: Farming Practices - After Harvest**

- a. Fertilizer usage
- b. Crop protection products
- c. Harvest timing & quality per crop - Field crops
- d. Harvest timing & quality per crop - Tree crops
- e. Harvest timing & quality per crop - Sugarcane
- f. Harvest timing & quality per crop - Banana
- g. After harvest

**PART VI - Other inputs - After Harvest**

- a. Input costs
- b. Abiotic stress
- c. Irrigation

See all questionnaires in external materials tab

## **data\_processing**

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**DATA EDITING****Data processing:**

Kynetec uses SPSS (Statistical Package for the Social Sciences) for data entry, cleaning, analysis, and reporting. After collection, the farm data is entered into a local database, reviewed, and quality-checked by the local Kynetec agency. In the case of missing values or inconsistencies, farmers are re-contacted. In some cases, grower data is verified with local experts (e.g. retailers) to ensure data accuracy and validity. After country-level cleaning, the farm-level data is submitted to the global Kynetec headquarters for processing. In the case of missing values or inconsistencies, the local Kynetec office was re-contacted to clarify and solve issues.

**Quality assurance**

Various consistency checks and internal controls are implemented throughout the entire data collection and reporting process in order to ensure unbiased, high quality data.

- **Screening:** Each grower is screened and selected by Kynetec based on cluster-specific criteria to ensure a comparable group of growers within each cluster. This helps keeping variability low.
- **Evaluation of the questionnaire:** The questionnaire aligns with the global objective of the project and is adapted to the local context (e.g. interviewers and growers should understand what is asked). Each year the questionnaire is evaluated based on several criteria, and updated where needed.
- **Briefing of interviewers:** Each year, local interviewers - familiar with the local context of farming -are thoroughly briefed to fully comprehend the questionnaire to obtain unbiased, accurate answers from respondents.
- **Cross-validation of the answers:**

o Kynetec captures all growers' responses through a digital data-entry tool. Various logical and consistency checks are automated in this tool (e.g. total crop size in hectares cannot be larger than farm size)

o Kynetec cross validates the answers of the growers in three different ways:

1. Within the grower (check if growers respond consistently during the interview)
2. Across years (check if growers respond consistently throughout the years)
3. Within cluster (compare a grower's responses with those of others in the group)

o All the above mentioned inconsistencies are followed up by contacting the growers and asking them to verify their answers. The data is updated after verification. All updates are tracked.

- Check and discuss evolutions and patterns: Global evolutions are calculated, discussed and reviewed on a monthly basis jointly by Kynetec and Syngenta.

- Sensitivity analysis: sensitivity analysis is conducted to evaluate the global results in terms of outliers, retention rates and overall statistical robustness. The results of the sensitivity analysis are discussed jointly by Kynetec and Syngenta.

- It is recommended that users interested in using the administrative level 1 variable in the location dataset use this variable with care and crosscheck it with the postal code variable.

## data\_appraisal

### DATA APPRAISAL

Due to the above mentioned checks, irregularities in fertilizer usage data were discovered which had to be corrected:

For data collection wave 2014, respondents were asked to give a total estimate of the fertilizer NPK-rates that were applied in the fields. From 2015 onwards, the questionnaire was redesigned to be more precise and obtain data by individual fertilizer products. The new method of measuring fertilizer inputs leads to more accurate results, but also makes a year-on-year comparison difficult. After evaluating several solutions to this problems, 2014 fertilizer usage (NPK input) was re-estimated by calculating a weighted average of fertilizer usage in the following years.

## Access policy

### CONTACTS

Name	Affiliation	Email	URL
The Good Growth Plan team	Syngenta	goodgrowthplan.data@syngenta.com	<a href="#">Link</a>

### CONFIDENTIALITY

The users shall not take any action with the purpose of identifying any individual entity (i.e. person, household, enterprise, etc.) in the micro dataset(s). If such a disclosure is made inadvertently, no use will be made of the information, and it will be reported immediately to FAO

### ACCESS CONDITIONS

Micro datasets disseminated by FAO shall only be allowed for research and statistical purposes. Users requesting access to any datasets must agree to the following minimal conditions:

- The micro dataset will only be used for statistical and/or research purposes;
- Any results derived from the micro dataset will be used solely for reporting aggregated information, and not for any specific individual entities or data subjects;
- The users shall not take any action with the purpose of identifying any individual entity (i.e. person, household, enterprise, etc.) in the micro dataset(s). If such a disclosure is made inadvertently, no use will be made of the information, and it will be reported immediately to FAO;
- The micro dataset cannot be re-disseminated by users or shared with anyone other than the individuals that are granted access to the micro dataset by FAO.

### CITATION REQUIREMENTS

The Good Growth Plan Progress Data - Productivity 2019

## Disclaimer and copyrights

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### DISCLAIMER

The user of the data acknowledges that the original collector of the data, the authorized distributor of the data, and the relevant funding agency bear no responsibility for use of the data or for interpretations or inferences based upon such uses

## Metadata production

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### DDI DOCUMENT ID

DDI\_DEU\_2015\_GGP-P\_v01\_M\_v01\_A\_OCS

### PRODUCERS

Name	Abbreviation	Affiliation	Role
Office of Chief Statistician	OCS	Food and Agriculture Organization	Metadata producer
Development Economics Data Group	DECDG	The World Bank	Metadata adapted for World Bank Microdata Library

### DATE OF METADATA PRODUCTION

2023-01-26

### DDI DOCUMENT VERSION

Version 01 (January 2023): This metadata was downloaded from the FAO website (<https://microdata.fao.org/index.php/catalog>) and it is identical to FAO version (DEU\_2015\_GGP-P\_v01\_EN\_M\_A\_OCS). The following two metadata fields were edited - Document ID and Survey ID.

**data\_dictionary**

<b>Data file</b>	<b>Cases</b>	<b>variables</b>
<b>seed_treatment</b>	0	21
<b>Farm_level_data</b>	0	26
<b>Global_farm_data</b>	0	9
<b>Crop_protection</b>	0	24
<b>Location</b>	0	6





**Data file: seed\_treatment**

Cases: 0

variables: 21

**variables**

ID	Name	Label	Question
V1	harvestyear	Data collection wave	
V2	GrowingArea	To which field/plot does the information relate to?	
V3	ClusterID	Unique cluster ID	
V4	country	Country	
V5	Farmtype	FARMTYPE	
V6	GrowerID	Unique respondent ID	
V7	product	Unique code of a product that was applied	
V8	crop	The crop of focus	
V9	q233c_b	Q233C. b.Type of product	
V10	q233c_c	Q233C. c. Brand product name	
V11	c233c_c	CODED VARIABLE - stringcode	
V12	c233ca1	CODED VARIABLE - active ingredient1	
V13	c233cp1	CODED VARIABLE - amount of ai1	
V14	c233cu1	CODED VARIABLE - unit (% or Gr)	
V15	c233ca2	CODED VARIABLE - active ingredient2	
V16	c233cp2	CODED VARIABLE - amount of ai2	
V17	c233ca3	CODED VARIABLE - active ingredient3	
V18	c233cp3	CODED VARIABLE - amount of ai3	
V19	q233c_d	Q233C. d. PRODUCT 1: Dosage	
V20	q233c_e	Q233C. e. PRODUCT 1: Unit of quantity	
V21	syngenta	CODED VARIABLE Syngenta product? (1 = YES; 0 = NO)	

total: 21

**Data file: Farm\_level\_data**

Cases:	0
variables:	26

**variables**

ID	Name	Label	Question
V22	HarvestYear	Data collection wave	
V23	Region	Syngenta's definition of Region	
V24	Territory	Syngenta's definition of Territory	
V25	GrowingArea	To which field/plot does the information relate to?	
V26	ClusterID	Unique cluster ID	
V27	country	Country	
V28	Farmtype	Farm type	
V29	GrowerID	Unique respondent ID	
V30	Crop	The crop of focus	
V31	AreaSize	Q57. Size of growing area A for <TARG1> in <HECT>	
V32	CropSize	Q5.Total cultivated area of <TARG1> in this season in <HECT>	
V33	FarmSize	Q6. Total size of your farm/cultivated area for all crops in <HECT>	
V34	Landproductivity	Land efficiency in ton/ha	
V35	PesticideApplicationEfficiency	Number of field applications used per ton produced	
V36	NutrientEfficiency	Kgs of nitrogen used per ton produced	
V37	PhosphorusEfficiency	Kgs of phosphorus used per ton produced	
V38	PotassiumEfficiency	Kgs of potassium used per ton produced	
V39	SeedEfficiency	Kgs of seeds used per ton produced	
V40	PesticideEfficiency	Kgs of active ingredients from pesticides used in kilogram per ton produced	
V41	HerbicideEfficiency	Kgs of active ingredients from herbicides used per ton produced	
V42	FungicideEfficiency	Kgs of active ingredients from fungicides used per ton produced	
V43	InsecticideEfficiency	Kgs of active ingredients from insecticides used per ton produced	
V44	SyngentaShare	Percentage of syngenta products used compared to total number of products used	
V45	User_vs_non_user	Does the grower use Syngenta products?	
V46	planting_date	Date of sowing or planting	
V47	harvest_begin	Date when harvest started	

total: 26

**Data file: Global\_farm\_data**

Cases: 0

variables: 9

**variables**

ID	Name	Label	Question
V48	Territory	Syngenta definition of territory (sub-region)	
V49	country	Country	
V50	ClusterID	Unique cluster ID	
V51	GrowerID	Unique respondent ID	
V52	GrowingArea	To which field/plot does the information relate to?	
V53	Farmtype	Farmtype	
V54	crop	Crop of focus	
V55	q67	Q67. What is the soil type of growing area A for <TARGET CROP>?	
V56	harvestyear	Data collection wave	

total: 9

**Data file: Crop\_protection**

Cases: 0

variables: 24

**variables**

ID	Name	Label	Question
V57	harvestyear	Data collection wave	
V58	GrowingArea	To which field/plot does the information relate to?	
V59	ClusterID	Unique cluster ID	
V60	country	Country	
V61	Farmtype	FARMTYPE	
V62	GrowerID	Unique respondent ID	
V63	product	Unique code of a product within application	
V64	crop	The crop of focus	
V65	application	Unique code of an application per field per grower	
V66	q241a	Q241 a. Timing of product application	
V67	q241b	Q241 b.Type of product	
V68	q241c	Q241 c . Brand product name	
V69	c241c	CODED VARIABLE - stringcode	
V70	c241ca1	CODED VARIABLE - active ingredient1	
V71	c241cp1	CODED VARIABLE - amount of ai1	
V72	c241cu1	CODED VARIABLE - unit (% or Gr)	
V73	c241ca2	CODED VARIABLE - active ingredient2	
V74	c241cp2	CODED VARIABLE - amount of ai2	
V75	c241ca3	CODED VARIABLE - active ingredient3	
V76	c241cp3	CODED VARIABLE - amount of ai3	
V77	q241d	CODED VARIABLE Q241 d. Dosage ?	
V78	q241e	CODED VARIABLE Q241 e. Unit of quantity	
V79	q241g	Q241 g. Pest/disease/ weed targeted ?	
V80	syngenta	CODED VARIABLE Syngenta product? (1 = YES; 0 = NO)	

total: 24

**Data file: Location**

Cases: 0

variables: 6

**variables**

ID	Name	Label	Question
V81	harvestyear	Year in which the data was collected	
V82	country	Country	
V83	ClusterID	Unique identifier per cluster	
V84	GrowerID	Unique identifier per grower	
V85	GrowingArea	Field code (A or B)	
V86	admin_level_1	administrative area 1	

total: 6



**HARVESTYEAR: Data collection wave****Data file:** seed\_treatment**Overview**

Valid: 0    Invalid: 0

Type: Discrete    Decimal: 0    Width: 12    Range: 2015 - 2015    Format: Numeric

**Q233C\_C: Q233C. c. Brand product name****Data file:** seed\_treatment**Overview**

Valid: 0    Invalid: 0

Type: Discrete    Width: 12    Range: -    Format: character

**Questions and instructions**

## CATEGORIES

Value	Category
confidential	confidential

**GROWINGAREA: To which field/plot does the information relate to?****Data file:** seed\_treatment**Overview**

Valid: 0    Invalid: 0

Type: Discrete    Width: 12    Range: -    Format: character

**Questions and instructions**

## CATEGORIES

Value	Category
A	A
B	B

**CLUSTERID: Unique cluster ID****Data file:** seed\_treatment**Overview**

Valid: 0    Invalid: 0

Type: Discrete    Width: 12    Range: -    Format: character

## Questions and instructions

### CATEGORIES

Value	Category
GermanyBarley1	GermanyBarley1

### **COUNTRY: Country**

**Data file:** seed\_treatment

#### Overview

Valid: 0 Invalid: 0

Type: Discrete Width: 12 Range: - Format: character

## Questions and instructions

### CATEGORIES

Value	Category
Germany	Germany

### **FARMTYPE: FARMTYPE**

**Data file:** seed\_treatment

#### Overview

Valid: 0 Invalid: 0

Type: Discrete Width: 12 Range: - Format: character

## Questions and instructions

### CATEGORIES

Value	Category
BF	BF
RF	RF

### **GROWERID: Unique respondent ID**

**Data file:** seed\_treatment

#### Overview

Valid: 0 Invalid: 0

Type: Discrete Width: 12 Range: - Format: character



## Questions and instructions

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### CATEGORIES

Value	Category
461001	461001
461002	461002
461003	461003
461004	461004
461005	461005
461006	461006
461007	461007
461008	461008
461009	461009
461010	461010
461011	461011
461012	461012
461013	461013
461014	461014
461015	461015
461016	461016
461017	461017
461018	461018
461019	461019
461020	461020
461021	461021
461022	461022
461023	461023
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462097	462097
462098	462098
462099	462099
462100	462100

462101

462101

**PRODUCT: Unique code of a product that was applied****Data file:** seed\_treatment**Overview**

Valid: 0 Invalid: 0

Type: Discrete Width: 12 Range: - Format: character

**Questions and instructions**

## CATEGORIES

Value	Category
1	1

**CROP: The crop of focus****Data file:** seed\_treatment**Overview**

Valid: 0 Invalid: 0

Type: Discrete Width: 12 Range: - Format: character

**Questions and instructions**

## CATEGORIES

Value	Category
Barley	Barley

**Q233C\_B: Q233C. b.Type of product****Data file:** seed\_treatment**Overview**

Valid: 0 Invalid: 0

Type: Discrete Decimal: 0 Width: 12 Range: 1 - 1 Format: Numeric

**Questions and instructions**

## CATEGORIES

Value	Category
1	Fungicide

**C233C\_C: CODED VARIABLE - stringcode****Data file:** seed\_treatment**Overview**

Valid: 0 Invalid: 0

Type: Discrete Width: 12 Range: - Format: character

**Questions and instructions**

## CATEGORIES

Value	Category
confidential	confidential

**C233CA1: CODED VARIABLE - active ingredient1****Data file:** seed\_treatment**Overview**

Valid: 0 Invalid: 0

Type: Discrete Width: 12 Range: - Format: character

**Questions and instructions**

## CATEGORIES

Value	Category
DIFENOCONAZOLE	DIFENOCONAZOLE

**C233CP1: CODED VARIABLE - amount of ai1****Data file:** seed\_treatment**Overview**

Valid: 0 Invalid: 0

Type: Continuous Decimal: 0 Width: 10 Range: 20 - 20 Format: Numeric

**C233CU1: CODED VARIABLE - unit (% or Gr)****Data file:** seed\_treatment**Overview**

Valid: 0 Invalid: 0

Type: Discrete Width: 12 Range: - Format: character

## Questions and instructions

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### CATEGORIES

Value	Category
g/l	g/l

### C233CA2: CODED VARIABLE - active ingredient2

Data file: seed\_treatment

#### Overview

Valid: 0 Invalid: 0

Type: Discrete Width: 12 Range: - Format: character

## Questions and instructions

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### CATEGORIES

Value	Category
FLUDIOXONIL	FLUDIOXONIL

### C233CP2: CODED VARIABLE - amount of ai2

Data file: seed\_treatment

#### Overview

Valid: 0 Invalid: 0

Type: Continuous Decimal: 0 Width: 10 Range: 25 - 25 Format: Numeric

### C233CA3: CODED VARIABLE - active ingredient3

Data file: seed\_treatment

#### Overview

Valid: 0 Invalid: 0

Type: Discrete Width: 12 Range: - Format: character

## Questions and instructions

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### CATEGORIES

Value	Category
TEBUCONAZOLE	TEBUCONAZOLE



**C233CP3: CODED VARIABLE - amount of ai3****Data file:** seed\_treatment**Overview**

Valid: 0    Invalid: 0

Type: Continuous    Decimal: 0    Width: 10    Range: 5 - 5    Format: Numeric

**Q233C\_D: Q233C. d. PRODUCT 1: Dosage****Data file:** seed\_treatment**Overview**

Valid: 0    Invalid: 0

Type: Discrete    Decimal: 0    Width: 12    Range: 1 - 1    Format: Numeric

**Questions and instructions**

## CATEGORIES

Value	Category
1	2

**Q233C\_E: Q233C. e. PRODUCT 1: Unit of quantity****Data file:** seed\_treatment**Overview**

Valid: 0    Invalid: 0

Type: Discrete    Width: 12    Range: -    Format: character

**Questions and instructions**

## CATEGORIES

Value	Category
ML/KG	ML/KG

**SYNGENTA: CODED VARIABLE Syngenta product? (1 = YES; 0 = NO)****Data file:** seed\_treatment**Overview**

Valid: 0    Invalid: 0

Type: Discrete    Decimal: 0    Width: 12    Range: 1 - 1    Format: Numeric

## Questions and instructions

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### CATEGORIES

Value	Category
1	Yes

**HARVESTYEAR: Data collection wave****Data file:** Farm\_level\_data**Overview**

Valid: 0    Invalid: 0

Type: Discrete    Decimal: 0    Width: 12    Range: 2014 - 2017    Format: Numeric

**REGION: Syngenta's definition of Region****Data file:** Farm\_level\_data**Overview**

Valid: 0    Invalid: 0

Type: Discrete    Width: 12    Range: -    Format: character

**Questions and instructions**

## CATEGORIES

Value	Category
eame	eame

**TERRITORY: Syngenta's definition of Territory****Data file:** Farm\_level\_data**Overview**

Valid: 0    Invalid: 0

Type: Discrete    Width: 12    Range: -    Format: character

**Questions and instructions**

## CATEGORIES

Value	Category
europe north	europe north

**GROWINGAREA: To which field/plot does the information relate to?****Data file:** Farm\_level\_data**Overview**

Valid: 0    Invalid: 0

Type: Discrete    Width: 12    Range: -    Format: character

## Questions and instructions

### CATEGORIES

Value	Category
A	A
B	B

## CLUSTERID: Unique cluster ID

Data file: Farm\_level\_data

### Overview

Valid: 0 Invalid: 0

Type: Discrete Width: 12 Range: - Format: character

## Questions and instructions

### CATEGORIES

Value	Category
germanybarley1	germanybarley1

## COUNTRY: Country

Data file: Farm\_level\_data

### Overview

Valid: 0 Invalid: 0

Type: Discrete Width: 12 Range: - Format: character

## Questions and instructions

### CATEGORIES

Value	Category
Germany	Germany

## FARMTYPE: Farm type

Data file: Farm\_level\_data

### Overview

Valid: 0 Invalid: 0

Type: Discrete Width: 12 Range: - Format: character

## Questions and instructions

### CATEGORIES

Value	Category
bf	bf
rf	rf

## GROWERID: Unique respondent ID

Data file: Farm\_level\_data

### Overview

Valid: 0 Invalid: 0

Type: Discrete Width: 12 Range: - Format: character

## Questions and instructions

### CATEGORIES

Value	Category
461001	461001
461002	461002
461003	461003
461004	461004
461005	461005
461006	461006
461007	461007
461008	461008
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461010	461010
461011	461011
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461016	461016
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461019	461019
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461021	461021

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462019	462019
462020	462020



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462101	462101
462114	462114
462120	462120

462162	462162
462181	462181
462186	462186
462187	462187
462195	462195
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462197	462197
462198	462198
462199	462199
462200	462200
462201	462201
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462203	462203
462204	462204
462205	462205
462206	462206
462207	462207
462208	462208
462209	462209
462210	462210

## CROP: The crop of focus

Data file: Farm\_level\_data

### Overview

Valid: 0 Invalid: 0

Type: Discrete Width: 12 Range: - Format: character

### Questions and instructions

#### CATEGORIES

Value	Category
barley	barley

## AREASIZE: Q57. Size of growing area A for in

Data file: Farm\_level\_data

### Overview

Valid: 0 Invalid: 0

Type: Continuous Decimal: 0 Width: 10 Range: 0.4 - 56 Format: Numeric

**CROPSIZE: Q5.Total cultivated area of in this season in****Data file: Farm\_level\_data****Overview**

Valid: 0 Invalid: 0

Type: Continuous Decimal: 0 Width: 10 Range: 2 - 10 Format: Numeric

**FARMSIZE: Q6. Total size of your farm/cultivated area for all crops in****Data file: Farm\_level\_data****Overview**

Valid: 0 Invalid: 0

Type: Continuous Decimal: 0 Width: 10 Range: 2 - 10 Format: Numeric

**LANDPRODUCTIVITY: Land efficiency in ton/ha****Data file: Farm\_level\_data****Overview**

Valid: 0 Invalid: 0

Type: Continuous Decimal: 0 Width: 10 Range: 3.9 - 13.8 Format: Numeric

**PESTICIDEAPPLICATIONEFFICIENCY: Number of field applications used per ton produced****Data file: Farm\_level\_data****Overview**

Valid: 0 Invalid: 0

Type: Continuous Decimal: 0 Width: 10 Range: 0.0859845227858985 - 1.09622411693057 Format: Numeric

**NUTRIENTEFFICIENCY: Kgs of nitrogen used per ton produced****Data file: Farm\_level\_data****Overview**

Valid: 0 Invalid: 0

Type: Continuous Decimal: 0 Width: 10 Range: 0 - 49.7435897435897 Format: Numeric

**PHOSPHORUSEFFICIENCY: Kgs of phosphorus used per ton produced****Data file: Farm\_level\_data**

**Overview**

Valid: 0 Invalid: 0

Type: Continuous Decimal: 0 Width: 10 Range: 0 - 0 Format: Numeric

**POTASSIUM EFFICIENCY: Kgs of potassium used per ton produced****Data file:** Farm\_level\_data**Overview**

Valid: 0 Invalid: 0

Type: Continuous Decimal: 0 Width: 10 Range: 0 - 0 Format: Numeric

**SEED EFFICIENCY: Kgs of seeds used per ton produced****Data file:** Farm\_level\_data**Overview**

Valid: 0 Invalid: 0

Type: Continuous Decimal: 0 Width: 10 Range: 5.32786885245902 - 51.5384615384615 Format: Numeric

**PESTICIDE EFFICIENCY: Kgs of active ingredients from pesticides used in kilogram per ton produced****Data file:** Farm\_level\_data**Overview**

Valid: 0 Invalid: 0

Type: Continuous Decimal: 0 Width: 10 Range: 0.00081516483516484 - 1.23116 Format: Numeric

**HERBICIDE EFFICIENCY: Kgs of active ingredients from herbicides used per ton produced****Data file:** Farm\_level\_data**Overview**

Valid: 0 Invalid: 0

Type: Continuous Decimal: 0 Width: 10 Range: 0 - 1.18 Format: Numeric

**FUNGICIDE EFFICIENCY: Kgs of active ingredients from fungicides used per ton produced****Data file:** Farm\_level\_data**Overview**

Valid: 0 Invalid: 0

Type: Continuous Decimal: 0 Width: 10 Range: 0 - 0.438689634146341 Format: Numeric

**INSECTICIDEEFFICIENCY: Kgs of active ingredients from insecticides used per ton produced****Data file:** Farm\_level\_data**Overview**

Valid: 0 Invalid: 0

Type: Continuous Decimal: 0 Width: 10 Range: 0 - 0.00534188034188034 Format: Numeric

**SYNGENTASHARE: Percentage of syngenta products used compared to total number of products used****Data file:** Farm\_level\_data**Overview**

Valid: 0 Invalid: 0

Type: Continuous Decimal: 0 Width: 10 Range: 0 - 100 Format: Numeric

**USER\_VS\_NON\_USER: Does the grower use Syngenta products?****Data file:** Farm\_level\_data**Overview**

Valid: 0 Invalid: 0

Type: Discrete Decimal: 0 Width: 12 Range: 1 - 3 Format: Numeric

**Questions and instructions**

## CATEGORIES

Value	Category
1	non-user
2	exclusive user
3	mixed user

**PLANTING\_DATE: Date of sowing or planting****Data file:** Farm\_level\_data**Overview**

Valid: 0 Invalid: 0

Type: Discrete Width: 12 Range: - Format: character

**Questions and instructions**

## CATEGORIES

Value	Category
2016-09-12	2016-09-12

2016-09-13	2016-09-13
2016-09-14	2016-09-14
2016-09-15	2016-09-15
2016-09-16	2016-09-16
2016-09-18	2016-09-18
2016-09-19	2016-09-19
2016-09-20	2016-09-20
2016-09-21	2016-09-21
2016-09-22	2016-09-22
2016-09-23	2016-09-23
2016-09-24	2016-09-24
2016-09-25	2016-09-25
2016-09-26	2016-09-26
2016-09-27	2016-09-27
2016-09-28	2016-09-28
2016-09-29	2016-09-29
2016-09-30	2016-09-30
2016-10-01	2016-10-01
2016-10-02	2016-10-02
2016-10-03	2016-10-03
2016-10-04	2016-10-04
2016-10-05	2016-10-05
2016-10-06	2016-10-06
2016-10-08	2016-10-08
2016-10-11	2016-10-11
2016-10-12	2016-10-12
2016-10-14	2016-10-14
2016-10-15	2016-10-15
2016-10-25	2016-10-25

## **HARVEST\_BEGIN: Date when harvest started**

**Data file:** Farm\_level\_data

### **Overview**

Valid: 0    Invalid: 0

Type: Discrete    Width: 12    Range: -    Format: character

### **Questions and instructions**

Value	Category
2017-06-26	2017-06-26
2017-06-28	2017-06-28
2017-07-03	2017-07-03
2017-07-04	2017-07-04
2017-07-05	2017-07-05
2017-07-06	2017-07-06
2017-07-07	2017-07-07
2017-07-08	2017-07-08
2017-07-09	2017-07-09
2017-07-10	2017-07-10
2017-07-13	2017-07-13
2017-07-14	2017-07-14
2017-07-15	2017-07-15
2017-07-16	2017-07-16
2017-07-17	2017-07-17
2017-07-18	2017-07-18
2017-07-19	2017-07-19
2017-07-20	2017-07-20
2017-07-21	2017-07-21
2017-08-02	2017-08-02



**TERRITORY: Syngenta definition of territory (sub-region)****Data file:** Global\_farm\_data**Overview**

Valid: 0    Invalid: 0

Type: Discrete    Width: 12    Range: -    Format: character

**Questions and instructions**

## CATEGORIES

Value	Category
europe north	europe north

**COUNTRY: Country****Data file:** Global\_farm\_data**Overview**

Valid: 0    Invalid: 0

Type: Discrete    Width: 12    Range: -    Format: character

**Questions and instructions**

## CATEGORIES

Value	Category
Germany	Germany

**CLUSTERID: Unique cluster ID****Data file:** Global\_farm\_data**Overview**

Valid: 0    Invalid: 0

Type: Discrete    Width: 12    Range: -    Format: character

**Questions and instructions**

## CATEGORIES

Value	Category
germanybarley1	germanybarley1

**GROWERID: Unique respondent ID****Data file:** Global\_farm\_data

## Overview

Valid: 0 Invalid: 0

Type: Discrete Width: 12 Range: - Format: character

## Questions and instructions

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### CATEGORIES

Value	Category
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461003	461003
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461005	461005
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462096	462096
462097	462097

462098	462098
462099	462099
462100	462100
462101	462101

## GROWINGAREA: To which field/plot does the information relate to?

Data file: Global\_farm\_data

### Overview

Valid: 0 Invalid: 0

Type: Discrete Width: 12 Range: - Format: character

### Questions and instructions

#### CATEGORIES

Value	Category
a	a
b	b

## FARMTYPE: Farmtype

Data file: Global\_farm\_data

### Overview

Valid: 0 Invalid: 0

Type: Discrete Width: 12 Range: - Format: character

### Questions and instructions

#### CATEGORIES

Value	Category
bf	bf
rf	rf

## CROP: Crop of focus

Data file: Global\_farm\_data

### Overview

Valid: 0 Invalid: 0

Type: Discrete Width: 12 Range: - Format: character

## Questions and instructions

### CATEGORIES

Value	Category
barley	barley

### Q67: Q67. What is the soil type of growing area A for ?

Data file: Global\_farm\_data

#### Overview

Valid: 0 Invalid: 0

Type: Discrete Decimal: 0 Width: 12 Range: 1 - 8 Format: Numeric

## Questions and instructions

### CATEGORIES

Value	Category
1	clay soil
2	clay loam soil
3	loamy sand soil
4	sandy loam soil
5	silt loam soil
6	sandy clay loam soil
7	sand soil
8	other. specify:

### HARVESTYEAR: Data collection wave

Data file: Global\_farm\_data

#### Overview

Valid: 0 Invalid: 0

Type: Discrete Decimal: 0 Width: 12 Range: 2015 - 2015 Format: Numeric



**HARVESTYEAR: Data collection wave****Data file:** Crop\_protection**Overview**

Valid: 0    Invalid: 0

Type: Discrete    Decimal: 0    Width: 12    Range: 2015 - 2015    Format: Numeric

**GROWINGAREA: To which field/plot does the information relate to?****Data file:** Crop\_protection**Overview**

Valid: 0    Invalid: 0

Type: Discrete    Width: 12    Range: -    Format: character

**Questions and instructions**

## CATEGORIES

Value	Category
A	A
B	B

**CLUSTERID: Unique cluster ID****Data file:** Crop\_protection**Overview**

Valid: 0    Invalid: 0

Type: Discrete    Width: 12    Range: -    Format: character

**Questions and instructions**

## CATEGORIES

Value	Category
GermanyBarley1	GermanyBarley1

**COUNTRY: Country****Data file:** Crop\_protection**Overview**

Valid: 0    Invalid: 0

Type: Discrete    Width: 12    Range: -    Format: character

## Questions and instructions

### CATEGORIES

Value	Category
Germany	Germany

### FARMTYPE: FARMTYPE

Data file: Crop\_protection

#### Overview

Valid: 0 Invalid: 0

Type: Discrete Width: 12 Range: - Format: character

## Questions and instructions

### CATEGORIES

Value	Category
BF	BF
RF	RF

### GROWERID: Unique respondent ID

Data file: Crop\_protection

#### Overview

Valid: 0 Invalid: 0

Type: Discrete Width: 12 Range: - Format: character

## Questions and instructions

### CATEGORIES

Value	Category
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461002	461002
461003	461003
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462033	462033
462034	462034
462035	462035
462036	462036
462037	462037
462038	462038
462039	462039
462040	462040
462041	462041
462042	462042
462043	462043
462044	462044
462045	462045
462047	462047
462048	462048
462049	462049
462050	462050
462051	462051
462052	462052
462053	462053
462054	462054
462055	462055
462056	462056
462057	462057
462058	462058
462059	462059
462060	462060
462061	462061
462062	462062
462063	462063
462064	462064
462065	462065
462066	462066
462067	462067
462068	462068
462069	462069
462070	462070

462071	462071
462072	462072
462073	462073
462074	462074
462075	462075
462076	462076
462077	462077
462078	462078
462079	462079
462080	462080
462082	462082
462083	462083
462084	462084
462085	462085
462086	462086
462087	462087
462090	462090
462091	462091
462092	462092
462093	462093
462095	462095
462096	462096
462097	462097
462098	462098
462099	462099
462100	462100
462101	462101

## PRODUCT: Unique code of a product within application

Data file: Crop\_protection

### Overview

Valid: 0 Invalid: 0

Type: Discrete Width: 12 Range: - Format: character

### Questions and instructions

#### CATEGORIES

Value	Category
-------	----------

1	1
2	2
3	3
4	4
5	5

## CROP: The crop of focus

Data file: Crop\_protection

### Overview

Valid: 0 Invalid: 0

Type: Discrete Width: 12 Range: - Format: character

### Questions and instructions

#### CATEGORIES

Value	Category
Barley	Barley

## APPLICATION: Unique code of an application per field per grower

Data file: Crop\_protection

### Overview

Valid: 0 Invalid: 0

Type: Discrete Width: 12 Range: - Format: character

### Questions and instructions

#### CATEGORIES

Value	Category
1	1
2	2
3	3
4	4
5	5
6	6

## Q241A: Q241 a. Timing of product application

Data file: Crop\_protection



## Overview

Valid: 0 Invalid: 0

Type: Discrete Width: 12 Range: - Format: character

## Questions and instructions

---

### CATEGORIES

Value	Category
2014-09-05	2014-09-05
2014-09-06	2014-09-06
2014-09-14	2014-09-14
2014-09-18	2014-09-18
2014-09-21	2014-09-21
2014-09-22	2014-09-22
2014-09-25	2014-09-25
2014-09-26	2014-09-26
2014-09-27	2014-09-27
2014-09-28	2014-09-28
2014-09-29	2014-09-29
2014-10-01	2014-10-01
2014-10-02	2014-10-02
2014-10-03	2014-10-03
2014-10-04	2014-10-04
2014-10-05	2014-10-05
2014-10-06	2014-10-06
2014-10-07	2014-10-07
2014-10-08	2014-10-08
2014-10-09	2014-10-09
2014-10-10	2014-10-10
2014-10-11	2014-10-11
2014-10-13	2014-10-13
2014-10-14	2014-10-14
2014-10-15	2014-10-15
2014-10-16	2014-10-16
2014-10-17	2014-10-17
2014-10-18	2014-10-18
2014-10-19	2014-10-19
2014-10-20	2014-10-20
2014-10-21	2014-10-21
2014-10-23	2014-10-23

2014-10-25	2014-10-25
2014-10-27	2014-10-27
2014-10-28	2014-10-28
2014-10-29	2014-10-29
2014-10-30	2014-10-30
2014-10-31	2014-10-31
2014-11-03	2014-11-03
2014-11-11	2014-11-11
2014-11-12	2014-11-12
2014-11-13	2014-11-13
2014-11-18	2014-11-18
2014-12-08	2014-12-08
2015-03-07	2015-03-07
2015-03-10	2015-03-10
2015-03-11	2015-03-11
2015-03-15	2015-03-15
2015-03-24	2015-03-24
2015-03-25	2015-03-25
2015-04-06	2015-04-06
2015-04-08	2015-04-08
2015-04-09	2015-04-09
2015-04-10	2015-04-10
2015-04-11	2015-04-11
2015-04-12	2015-04-12
2015-04-13	2015-04-13
2015-04-14	2015-04-14
2015-04-15	2015-04-15
2015-04-16	2015-04-16
2015-04-17	2015-04-17
2015-04-18	2015-04-18
2015-04-19	2015-04-19
2015-04-20	2015-04-20
2015-04-21	2015-04-21
2015-04-22	2015-04-22
2015-04-23	2015-04-23
2015-04-24	2015-04-24
2015-04-25	2015-04-25
2015-04-27	2015-04-27
2015-04-28	2015-04-28

2015-04-29	2015-04-29
2015-04-30	2015-04-30
2015-05-01	2015-05-01
2015-05-02	2015-05-02
2015-05-03	2015-05-03
2015-05-04	2015-05-04
2015-05-05	2015-05-05
2015-05-06	2015-05-06
2015-05-07	2015-05-07
2015-05-08	2015-05-08
2015-05-09	2015-05-09
2015-05-10	2015-05-10
2015-05-11	2015-05-11
2015-05-12	2015-05-12
2015-05-13	2015-05-13
2015-05-14	2015-05-14
2015-05-15	2015-05-15
2015-05-16	2015-05-16
2015-05-18	2015-05-18
2015-05-20	2015-05-20
2015-05-21	2015-05-21
2015-05-23	2015-05-23
2015-06-01	2015-06-01
2015-06-10	2015-06-10

## Q241B: Q241 b.Type of product

Data file: Crop\_protection

### Overview

Valid: 0 Invalid: 0

Type: Discrete Decimal: 0 Width: 12 Range: 1 - 4 Format: Numeric

### Questions and instructions

#### CATEGORIES

Value	Category
1	Herbicide
2	Insecticide
3	Fungicide

4	Plant growth regulator, harvest aids,adjuvants
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### Q241C: Q241 c . Brand product name

Data file: Crop\_protection

#### Overview

Valid: 0 Invalid: 0

Type: Discrete Width: 12 Range: - Format: character

#### Questions and instructions

##### CATEGORIES

Value	Category
confidential	confidential

### C241C: CODED VARIABLE - stringcode

Data file: Crop\_protection

#### Overview

Valid: 0 Invalid: 0

Type: Discrete Width: 12 Range: - Format: character

#### Questions and instructions

##### CATEGORIES

Value	Category
confidential	confidential

### C241CA1: CODED VARIABLE - active ingredient1

Data file: Crop\_protection

#### Overview

Valid: 0 Invalid: 0

Type: Discrete Width: 12 Range: - Format: character

#### Questions and instructions

##### CATEGORIES

Value	Category
ALPHA-CYPERMETHRIN	ALPHA-CYPERMETHRIN
AZOXYSTROBIN	AZOXYSTROBIN

BEFLUBUTAMID	BEFLUBUTAMID
BIXAFEN	BIXAFEN
CARFENTRAZONE-E	CARFENTRAZONE-E
CHLOROTHALONIL	CHLOROTHALONIL
CHLOROTOLURON	CHLOROTOLURON
CYFLUFENAMIDE	CYFLUFENAMIDE
CYFLUTHRIN	CYFLUTHRIN
CYPERMETHRIN	CYPERMETHRIN
CYPRODINIL	CYPRODINIL
DELTAMETHRIN	DELTAMETHRIN
DIFLUFENIKAN	DIFLUFENIKAN
Do not know	Do not know
EPOXYCONAZOLE	EPOXYCONAZOLE
ESFENVALERATE	ESFENVALERATE
ETHEFON	ETHEFON
FENPROPIDIN	FENPROPIDIN
FLORASULAM	FLORASULAM
FLUFENACET	FLUFENACET
FLUOXASTROBIN	FLUOXASTROBIN
FLUROXYPYR	FLUROXYPYR
FLURTAMONE	FLURTAMONE
GAMMA-CIHALOTRIN	GAMMA-CIHALOTRIN
ISOPROTURON	ISOPROTURON
LAMBDA CYHALOTHRIN	LAMBDA CYHALOTHRIN
MCPA	MCPA
MEPIQUAT-KLORID	MEPIQUAT-KLORID
MESOSULFURON METHYL	MESOSULFURON METHYL
PENDIMETHALIN	PENDIMETHALIN
PINOXADEN	PINOXADEN
PROCHLORAZ	PROCHLORAZ
PROSULFOCARB	PROSULFOCARB
PROTHIOCONAZOLE?	PROTHIOCONAZOLE
QUARTZ	QUARTZ
TEBUCONAZOLE	TEBUCONAZOLE
TRINEXAPAC-E,	TRINEXAPAC-E,
ZETA-CIPERMETRIN	ZETA-CIPERMETRIN

**C241CP1: CODED VARIABLE - amount of ai1****Data file:** Crop\_protection**Overview**

Valid: 0    Invalid: 0

Type: Continuous    Decimal: 0    Width: 10    Range: 5 - 800    Format: Numeric

**C241CU1: CODED VARIABLE - unit (% or Gr)****Data file:** Crop\_protection**Overview**

Valid: 0    Invalid: 0

Type: Discrete    Decimal: 0    Width: 12    Range: 1 - 2    Format: Numeric

**Questions and instructions**

## CATEGORIES

Value	Category
1	g/l
2	percent

**C241CA2: CODED VARIABLE - active ingredient2****Data file:** Crop\_protection**Overview**

Valid: 0    Invalid: 0

Type: Discrete    Width: 12    Range: -    Format: character

**Questions and instructions**

## CATEGORIES

Value	Category
CHLOROTHALONIL	CHLOROTHALONIL
CLOQUINTOCET-MEXYL	CLOQUINTOCET-MEXYL
DIFLUFENIKAN	DIFLUFENIKAN
FENPROPIMORF	FENPROPIMORF
FLORASULAM	FLORASULAM
FLUFENACET	FLUFENACET
ISOPROTURON	ISOPROTURON
ISOPYRAZAM	ISOPYRAZAM
METSULFURON-METHYL	METSULFURON-METHYL

PENDIMETHALIN	PENDIMETHALIN
PENOXSULAM	PENOXSULAM
PICOLINAFEN	PICOLINAFEN
PICOXYSTROBINE	PICOXYSTROBINE
PROHEXADIONE-CALCIUM	PROHEXADIONE-CALCIUM
PROPICONAZOLE	PROPICONAZOLE
PROTHIOCONAZOLE?	PROTHIOCONAZOLE
SPYROXAMINE	SPYROXAMINE
TEBUCONAZOLE	TEBUCONAZOLE
TRIADIMENOL	TRIADIMENOL
TRIBUNERONE-METHYL	TRIBUNERONE-METHYL

## C241CP2: CODED VARIABLE - amount of ai2

Data file: Crop\_protection

### Overview

Valid: 0 Invalid: 0

Type: Continuous Decimal: 0 Width: 10 Range: 2.5 - 500 Format: Numeric

## C241CA3: CODED VARIABLE - active ingredient3

Data file: Crop\_protection

### Overview

Valid: 0 Invalid: 0

Type: Discrete Width: 12 Range: - Format: character

### Questions and instructions

#### CATEGORIES

Value	Category
CLOPYRALID*	CLOPYRALID*
DIFLUFENIKAN	DIFLUFENIKAN
FLURTAMONE	FLURTAMONE
METRAFENONE	METRAFENONE
PENDIMETHALIN	PENDIMETHALIN
PYRACLOSTROBINE	PYRACLOSTROBINE
SPYROXAMINE	SPYROXAMINE

**Q241CP3: CODED VARIABLE - amount of ai3****Data file:** Crop\_protection**Overview**

Valid: 0    Invalid: 0

Type: Continuous    Decimal: 0    Width: 10    Range: 43 - 300    Format: Numeric

**Q241D: CODED VARIABLE Q241 d. Dosage ?****Data file:** Crop\_protection**Overview**

Valid: 0    Invalid: 0

Type: Continuous    Decimal: 0    Width: 10    Range: 10 - 20000    Format: Numeric

**Q241E: CODED VARIABLE Q241 e. Unit of quantity****Data file:** Crop\_protection**Overview**

Valid: 0    Invalid: 0

Type: Discrete    Decimal: 0    Width: 12    Range: 1 - 2    Format: Numeric

**Questions and instructions**

## CATEGORIES

Value	Category
1	MILLILITER/HECT
2	GRAM/HECT

**Q241G: Q241 g. Pest/disease/ weed targeted ?****Data file:** Crop\_protection**Overview**

Valid: 0    Invalid: 0

Type: Discrete    Width: 12    Range: -    Format: character

**Questions and instructions**

## CATEGORIES

Value	Category
don't know	don't know



**SYNGENTA: CODED VARIABLE Syngenta product? (1 = YES; 0 = NO)****Data file: Crop\_protection****Overview**

Valid: 0    Invalid: 0

Type: Discrete    Decimal: 0    Width: 12    Range: 1 - 2    Format: Numeric

**Questions and instructions**

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## CATEGORIES

Value	Category
1	No
2	Yes

---

**HARVESTYEAR: Year in which the data was collected****Data file: Location****Overview**

Valid: 0 Invalid: 0

Type: Discrete Decimal: 0 Width: 12 Range: 2015 - 2015 Format: Numeric

**COUNTRY: Country****Data file: Location****Overview**

Valid: 0 Invalid: 0

Type: Discrete Width: 12 Range: - Format: character

**Questions and instructions**

## CATEGORIES

Value	Category
Germany	Germany

**CLUSTERID: Unique identifier per cluster****Data file: Location****Overview**

Valid: 0 Invalid: 0

Type: Discrete Width: 12 Range: - Format: character

**Questions and instructions**

## CATEGORIES

Value	Category
GermanyBarley1	GermanyBarley1

**GROWERID: Unique identifier per grower****Data file: Location****Overview**

Valid: 0 Invalid: 0

Type: Discrete Decimal: 0 Width: 12 Range: 461001 - 462101 Format: Numeric

**GROWINGAREA: Field code (A or B)****Data file: Location****Overview**

Valid: 0    Invalid: 0

Type: Discrete    Width: 12    Range: -    Format: character

**Questions and instructions**

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## CATEGORIES

Value	Category
A	A
B	B

---

**ADMIN\_LEVEL\_1: administrative area 1****Data file: Location****Overview**

Valid: 0    Invalid: 0

Type: Discrete    Width: 12    Range: -    Format: character

**Questions and instructions**

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## CATEGORIES

Value	Category
TH	TH

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# study\_resources

## questionnaires

### 2015 GGP Questionnaire Master

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title 2015 GGP Questionnaire Master  
language English  
filename 2015 GGP Questionnaire Master.pdf

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## reports

### Enabling a set change in farm efficiency (productivity brochure)

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title Enabling a set change in farm efficiency (productivity brochure)  
language English  
filename SYT-GGP-c1productivity-brochure.pdf

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### The Good Growth Plan Progress Data - Productivity 2019

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title The Good Growth Plan Progress Data - Productivity 2019  
language English  
filename SYT-GGP-c1productivity-description-2019\_0.pdf

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