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Company presentation

2018
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Germany
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Outline



- General information
- Services (trials)
- Quality analysis
- Machinery
- Internal developments
- Data analysis
- Future projects



General information I



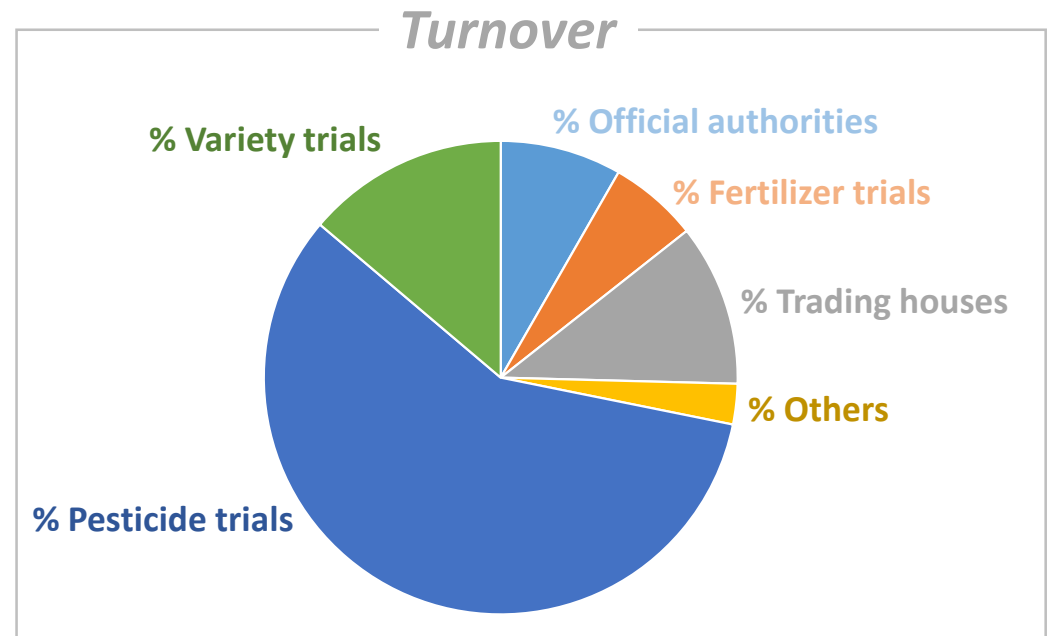
- Established in 1989 by H.-W. Scherf
- Agrartest is a leading company in agricultural field trial research in Germany
- Certifications
 - **GEP**-certified since 2000
(commission directive 93/71/EEC)
 - **GLP**-certified since 1996
(§ 19b, German chemical law (ChemG))

Deutscher Pflanzenschutzdienst German Plant Protection Service		HESSEN
GEP – Anerkennungsbescheinigung GEP - Recognition Certificate		
Die Versuchseinrichtung mit Hauptsitz in	AGRARTEST GmbH D-65326 Aarbergen - Panndorf Palmbachstr. 37	The testing facility with headquarter in
und organisatorisch zugehöriger Arbeitseinheit in	Grabau (SH), Groß Lobke (NS), Rosenow (MV), Salbitz (SA), Sonneborn/Friedrichswerth (TH), Schwieberdingen, Beimenstetten, Bad Säckingen, (BW), Kümmich, Unterföhring (BY)	and subsidiary testing unit in
Des Trägers der Versuchseinrichtung ist auf Antrag vom	AGRARTEST GmbH 22.10.2015	supported by on application from
und durchgeführter Besichtigung durch	Dr. Monica Frosch (He), Dr. Friedrich Merz (BW)	and inspection by
vom	Regierungspräsidium Gießen - Pflanzenschutzdienst Hessen - Referat 33 - Pflanzliche und tierische Erzeugung - Regierungspräsidium Stuttgart	from the
am	02.05.2016	on
amtlich anerkannt worden im Sinne des §8 Absatz 6 der Pflanzenschutzmittelverordnung		has been officially recognized under paragraph (6) of Article 8 of the Plant Protection Products Ordinance following its application dated
Wetzlar, den 14.06.2016		 (Dr. M. Frosch)
Anschrift der Anerkennungsbehörde	Regierungspräsidium Gießen -Pflanzenschutzdienst Hessen- Schanzenerstraße 6 35578 Wetzlar	Address of the Recognising authority

General information II

- Agrartest manages in Germany:
 - 70 000 plots
 - 1 500 trials

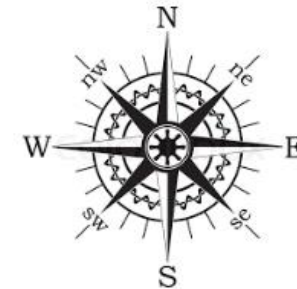
- 65 % turnover pesticide trials



10 testing facilities in Germany

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Contact Agrartest GmbH headquarters

Palmbachstrasse 37

65326 Aarbergen

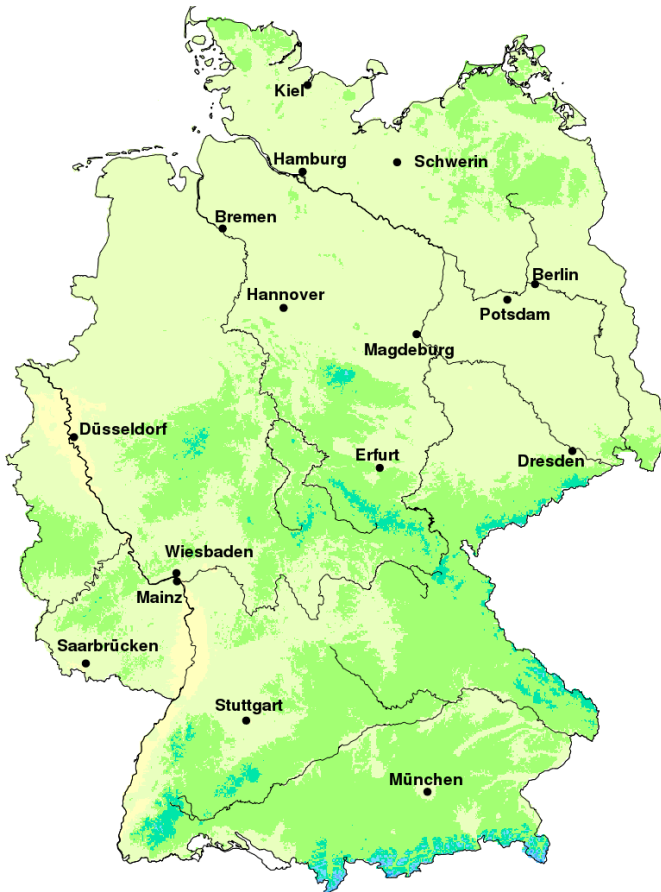
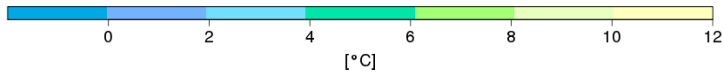
Germany

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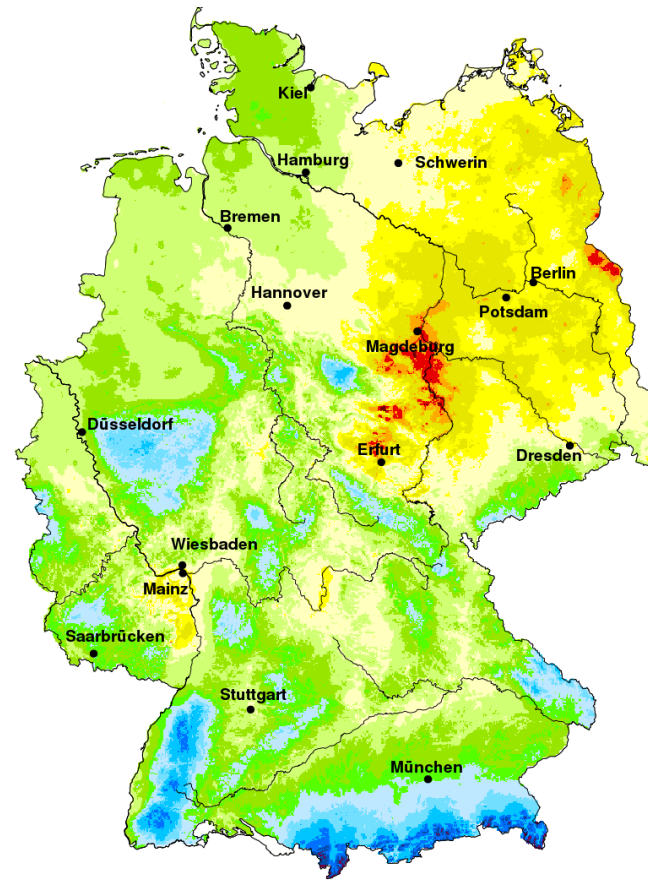
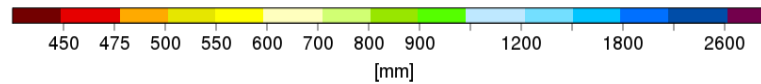
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Climate in Germany

Temperature



Precipitation



Annual average 1961-1990

Ø temp. (°C): 8.2

Ø precip. (mm): 800

Last decade:

Ø temperature ↑

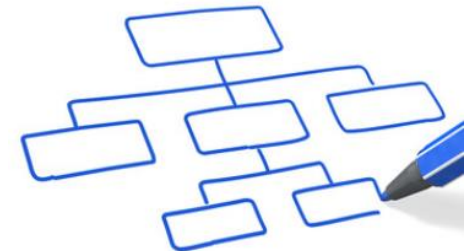
Dry springs

Warmer winters

Severe rainfall events

Staff

- Agrartest employs 40 people and temporary staff
- 2 – 8 persons per testing facility
- Each testing facility is comprised of team of agricultural-, test engineers and technical assistants and is headed by a team leader
- Responsible persons are designated for the management of different sectors (varieties, fertilization, pest management and GLP)



Our customers

- Agrartest customers are very diverse:
 - Chemical industry
 - Fertilizer industry
 - Plant breeding companies
 - Trading houses
 - Public institutions, universities
- National and international
- Organic and conventional agriculture



Service and expertise: Crops



- ~ 45 species
- Arable crops
- Vegetable crops
- Fruits
- Ornamental plants
- (Fir) Trees
- Grassland and lawns
- Intercropping
- Specials: Viticulture, hops





Service and expertise: Trials I

- Trials with all types of PPPs (Plant Protection Products)

- Efficacy & selectivity (GEP)
- Residue studies (GLP)
 - Follow-up crops
 - Processed products (e.g. wine)
- ...



PPPs (Selectivity)



Efficacy trials (herbicides)



Efficacy trials (herbicides)





Efficacy trials (fungicides)



Efficacy trials



PPP residues in follow-up crops

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Service and expertise: Trials II

- Variety trials
- Marketing trials (demonstration)
- Fertilization trials
- Cultivation techniques (irrigation, seed rate)
- Orchard trials
- Small plot studies (development)
- Post-harvest (storage trials)

- Specials:
 - Non-crop trials (ways, places, railway tracks)



Variety trials

Breeder test trials
Cultivation techniques
Performance trials
Demonstration



Variety trials



plot-in-plot technique



Orchard trials



Hops



Additional service: Greenhouse trials



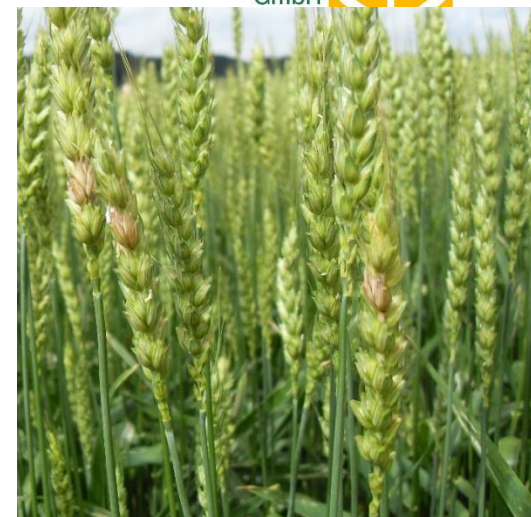
Cages for insecticide trials
e.g. Drosophila suzukii





Additional service

- Artificial inoculation trials – Fungi (*Fusarium* spp.)



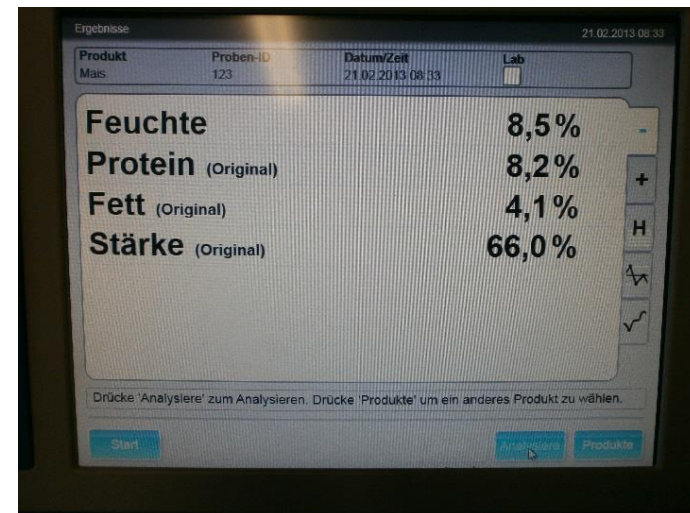
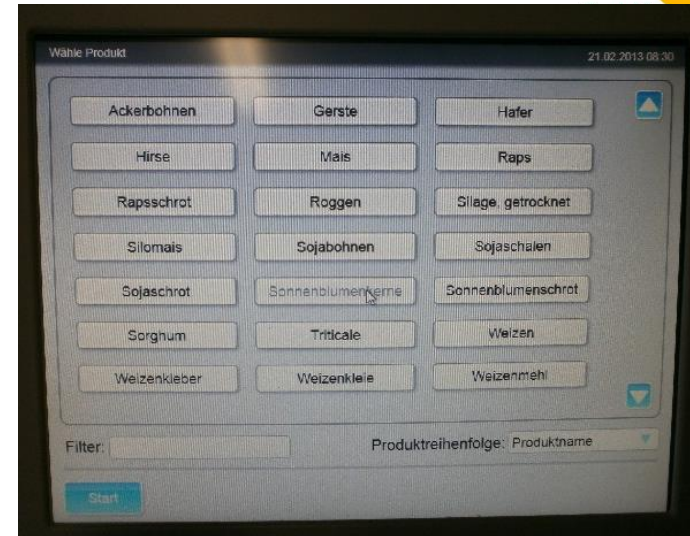
- Manual sowing of 'wanted' weeds





In-house quality analysis

- Near-infrared spectroscopy (NIR DA 7250, Perten)



- Our machinery consists of:
 - 10 plot seeders
 - 4 corn precision seed drills
 - 1 beet and sunflower seeder
 - 3 vineyard sprayers
 - 20 plot sprayers
 - 11 plot combine harvesters with weighing system, grain tank and straw chopper
 - 2 potato harvesters
 - 2 corn silage cutter
 - 2 plot dividers and diverse special machines

Plot seeder



Transportation I

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Transportation II



Tunnel sprayer - wine



Combine harvester



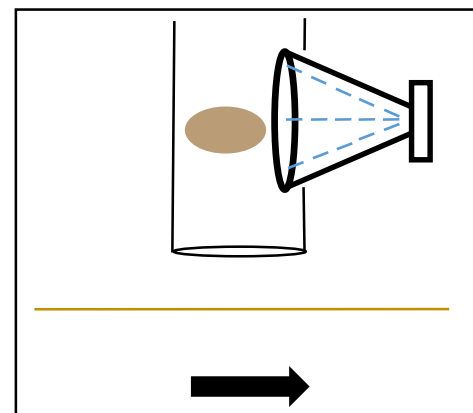
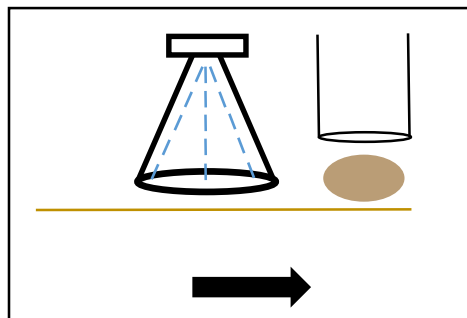
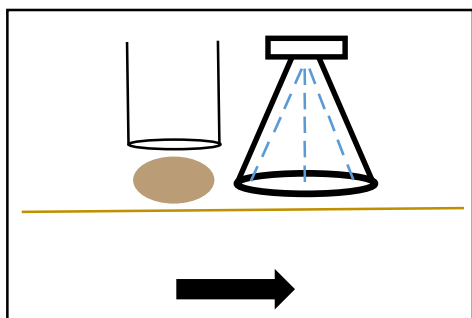
Maize harvester



Potato harvester



Techniques: potato treatments



Corn, sugar beet, sunflower:
Underground fertilisation and micro granular fertilisation

Internal developments



- Agrartest develops, produces and markets manually pushed **plot sprayers** ('bicycle sprayers')
- Since 2016, a self-developed **plot fertilizer** distributor is available
- **Railway track sprayers**

Plot sprayer



Non-crop trials: Railway tracks



Data management – *on field*

- ‘Outdoor notebooks’
- Voice recognition



- ARM software, Gylling Data Management, Inc.:
 - “(...) **establishing, managing, and summarizing** of herbicide, insecticide, fungicide, seed/variety, fertilizer (...) single field or greenhouse **trials.**”
 - “(...) standard throughout the crop protection industry for managing plant science research data.”
 - “(...) statistical analysis.”



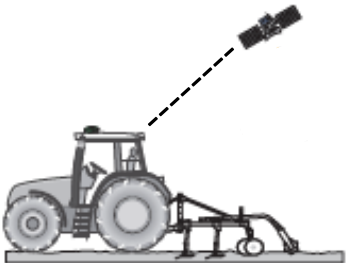


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Future projects

- Automatic steering systems for tractors
Automatic guidance by satellite navigation signals and sensors



- Automated phenotyping – camera





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Thank you for your attention.