Intelligent crop production

Active Farming

3C – the crop establishment concept

Gablingen trials site

Overview of the results

System techniques

Details

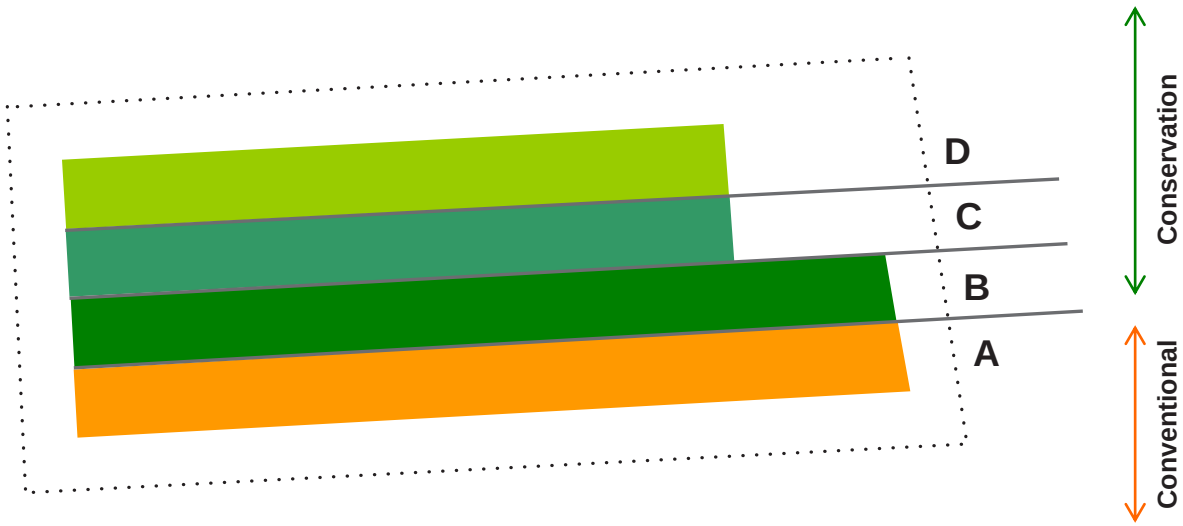
AMAZONE

Overview of the results: Gablingen trials site

Aim of the trials:

Has conservation tillage under practical conditions, in crop rotations containing root crops, advantages over using the plough?

Trials structure:

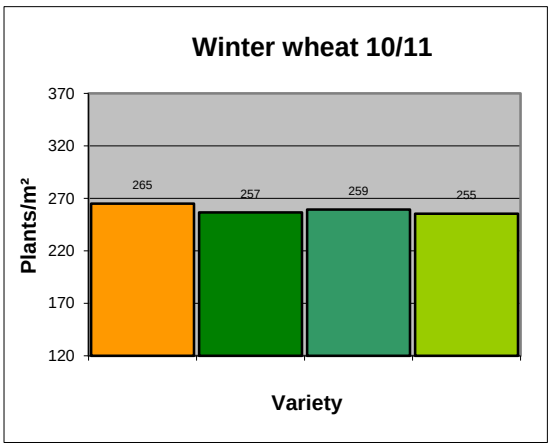


Plot A	Plot B	Plot C	Plot D
Plough	Mulch sowing	Mulch sowing	Mulch sowing
25 cm	22 cm	15 cm	8 cm

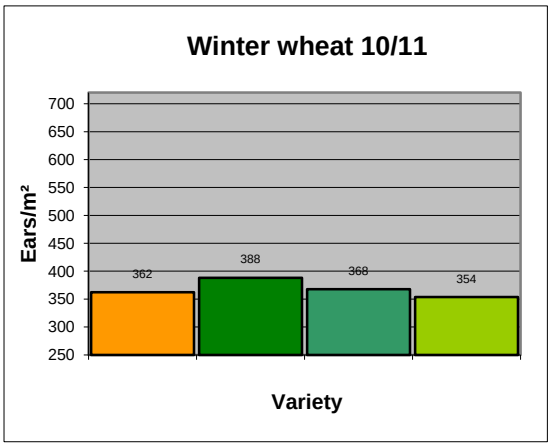
Initially, a stubble cultivation is carried out over all the plots with a compact disc harrow. Plot A is ploughed at a depth of 25 cm. In the min-till plots B and C, the soil tillage is carried out with a multi-row mulch cultivator at a depth of 22 cm and at 15 cm respectively. Plot D is worked again with the compact disc harrow at a depth of 8 cm.

Trials results 10/11:

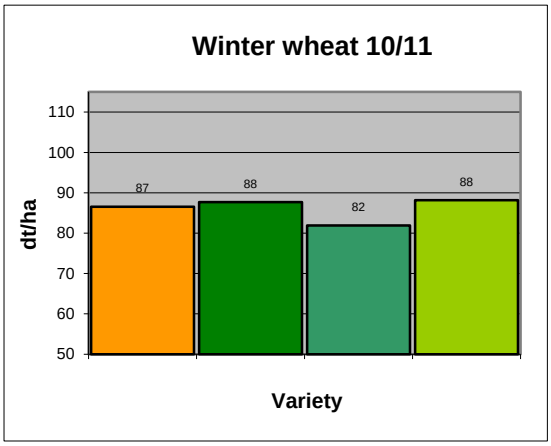
Plant emergence



Crop density



Yield



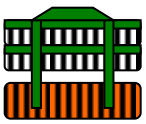
System techniques: Gablingen trials site

Trial plots for tillage, seedbed preparation and sowing

	Plot A Plough 25 cm	Plot B Mulch sowing 22 cm	Plot C Mulch sowing 15 cm	Plot D Mulch sowing 8 cm
Stubble working	Catros, working depth 6 cm			
Tillage	Plough 25 cm	Cenius 22 cm	Cenius 15 cm	Catros 8 cm
	Catros			
Seedbed and seeding cereals	KG - AD-P Super			

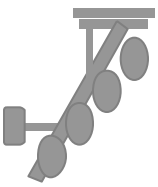
decreasing tillage intensity

Stubble cultivation



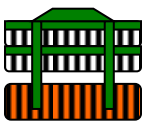
Catros in A, B, C & D

Soil tillage



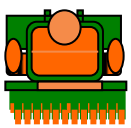
Plough in A

Cenius in B & C



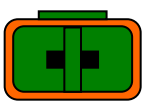
Catros in D
(and in A after the plough)

Sowing



AD-P Super in
A, B, C & D

Fertilisation



ZA-M in A, B, C & D

Crop protection

UF in A, B, C & D

AMAZONE trials at Gablingen (Bavaria)

First trials site in Southern Germany

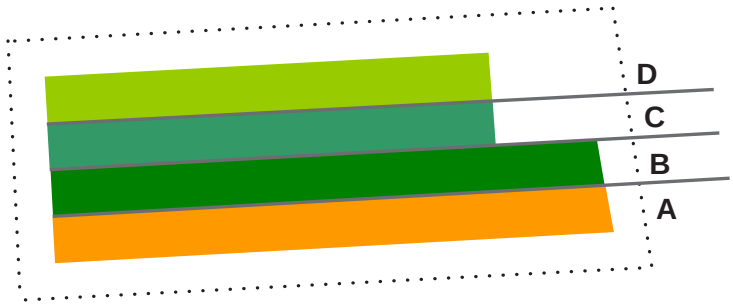
In the direct vicinity of our branch in Gablingen near Augsburg, AMAZONE included in autumn 2009 an additional site in its trials. The trials are created on a 5.6 ha sized field of the farmer Georg Reinsch and follow the scheme of the trials so far. Stubble work is carried out across all plots with the Catros compact disc harrow. For primary soil tillage, the conventional method with the plough is compared with conservation methods at different working depths. Sowing is carried out with an active till and drill combination.

The soil conditions of the site are characterised by a shallow sandy loam of medium soil quality above gravel. The soil has a good draining effect and therefore is appropriate for conservation soil tillage. Also the rainfall level of approx. 780 mm and the high evaporation rates suggest the need for conservation soil tillage. Therefore, the aim is, above all, to answer the question as to the optimum working depth.

The four links of the crop rotation includes, among others, potatoes (grown in 2010). The rest of the crop rotation consists of winter cereals.

Also at this site, there might be a big interest from farmers in the trial results. On the one hand the ratio of conventional soil tillage in this region is still at a high level. On the other hand, crop rotations with root crops are of special interest when using a conservation system.

Division of the trial sites on the farm Georg Reinsch in Gablingen



Plot A is worked conventionally with the plough, whereas plots B, C and D follow a min-till conservation tillage regime. In each case, the plots are sown with 2 varieties.

Site data	
Soil	Sandy loam, average soil quality
Climate	Annual rainfall 780 mm, average temperature: 8.4°C
Crop rotation	Potatoes, winter wheat, winter barley, winter wheat
Tramline width	15 m

Initial results:

The yields of the potato harvest in 2010 did not show any significant differences between the systems. Regarding the quality of product (infestation) no anomalies were noticed.

In 2011 the wheat yields are, with exception of plot C, at a uniformly high level.

The site can be cultivated with both, a conventional and also, a conservation system.

The cultivation of winter barley in 2011/2012 might be interesting. Here, this demanding crop rotation link is included in a long-term test for the first time.

Trial plots for tillage, seedbed preparation and sowing

	Plot A Plough 25 cm	Plot B Mulch sowing 22 cm	Plot C Mulch sowing 15 cm	Plot D Mulch sowing 8 cm
Stubble working	Catros, working depth 6 cm			
Tillage	Plough 25 cm	Cenius 22 cm	Cenius 15 cm	Catros 8 cm
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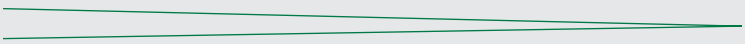
Seedbed and seeding cereals	KG - AD-P Super			



decreasing tillage intensity

Yield results (dt/ha) in comparison

	Plot A Plough 25 cm	Plot B Mulch sowing 22 cm	Plot C Mulch sowing 15 cm	Plot D Mulch sowing 8 cm
Winter wheat 10/11				
Seed rate seeds/m²	388 (variety Cubus)			
Seedling emergence (plants/m²)	265	257	259	255
Crop density (ears/m²)	362	388	368	354
Yield dt/ha	**87**	**88**	**82**	**88**

The yield results were determined in co-operation with PD Dr. Voßhenrich from vTI Braunschweig

Comment on trials results in Gablingen

by Dr. Sven Dutzi, AMAZONEN-WERKE

The creation of the trials field started with sowing a catch crop in August 2009. In spring 2010 potatoes followed as a first main crop. The yield results did not show any significant differences between the variants of the differing soil tillage. Also regarding quality (infestation) no differences were noticed between variants of conventional and conservation soil tillage. For the yield of winter wheat in the actual trial year of 2010/2011 it was similar.

There also, none of the variants could claim really significant advantage. Partly this could be foreseen already at the time of measuring the field emergence and number of ears which showed very little variation.

On the basis of the results so far, it seems to be the case that the site reacts very little to the varying cultivation intensities. It is too early for a final statement. One may be curious which yields and results the site will show with winter barley following winter wheat without baling the straw.