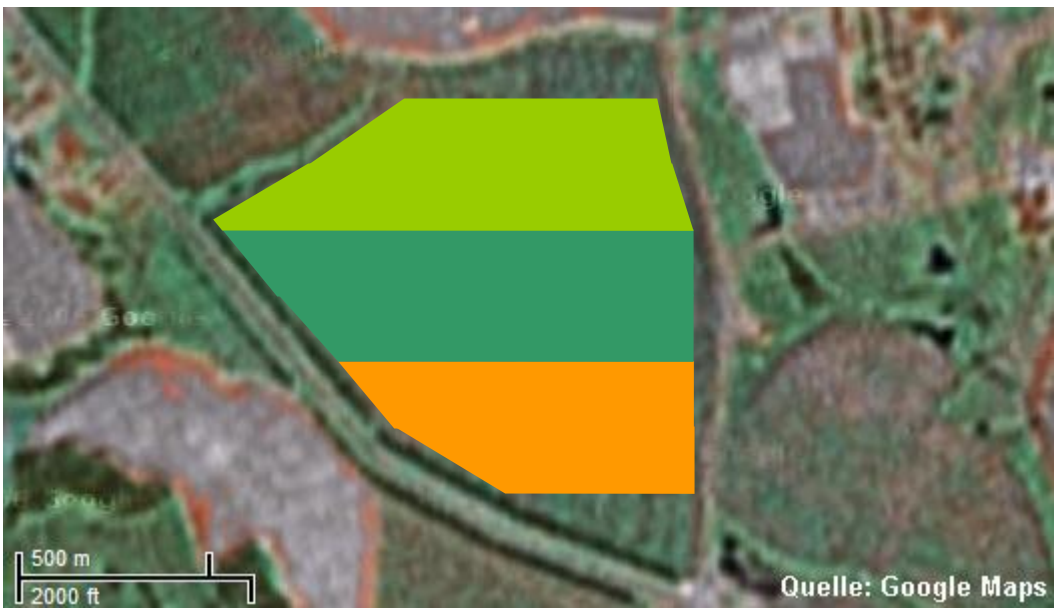
Intelligent crop production

Active Farming

3C – the crop establishment concept

Vladimir trials site (Russia)



Overview of the results

System techniques

Details

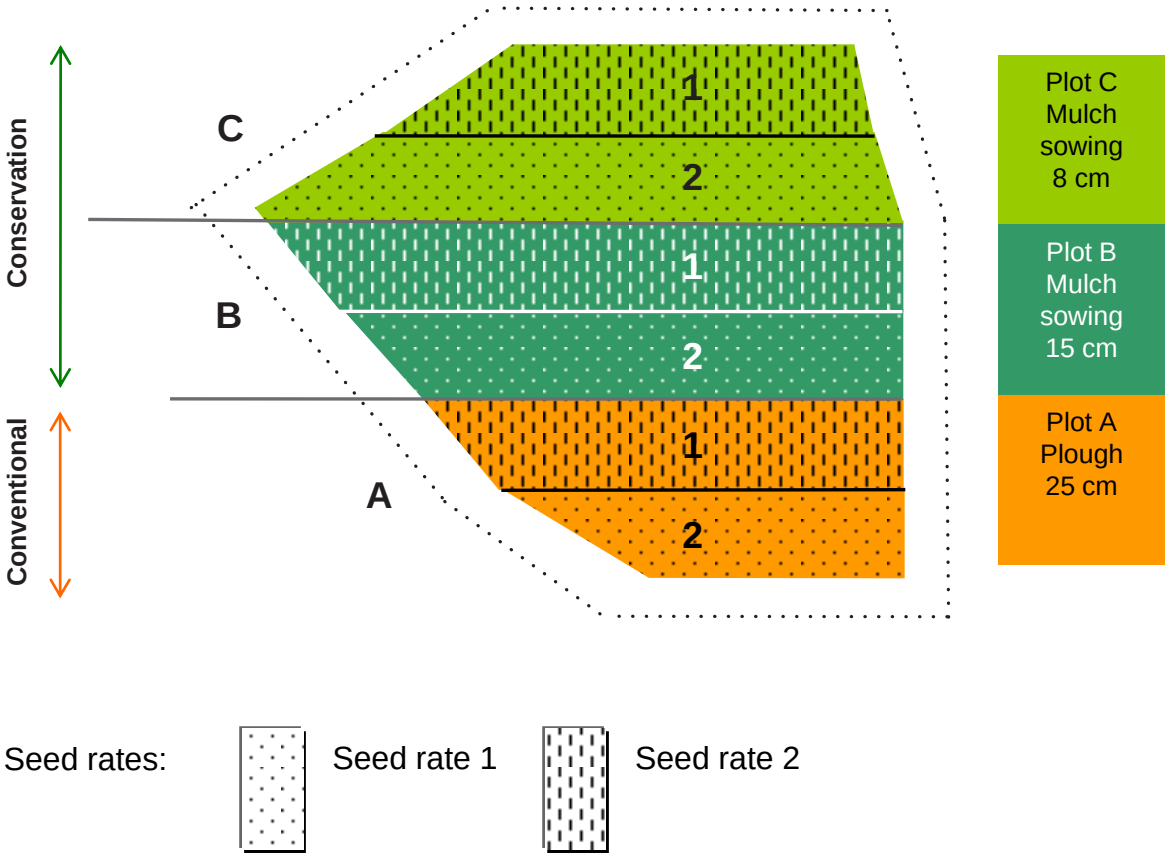
AMAZONE

Overview of the results: Vladimir trials site

Aim of the trials:

Can conservation tillage procedures be adopted in regions with a continental climate?

Trials structure:



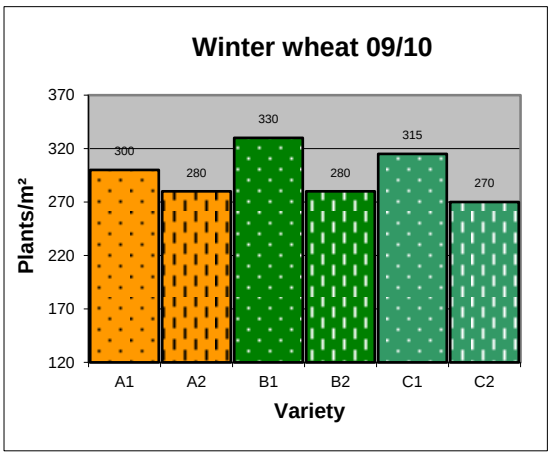
Seed rates: Seed rate 1 Seed rate 2

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 tine and disc combination cultivator in plot B at a depth of 15 cm following a pass with the compact disc harrow at a depth of 8 cm over both B and C.

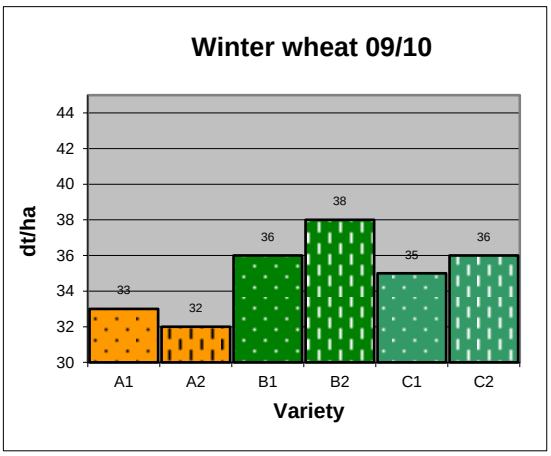
The sowing operation is carried out using a trailed, passive seed drill (Cirrus) at varying seed densities (Variant 1 and Variant 2).

Trials results 09/10 – 10/11:

Plant emergence



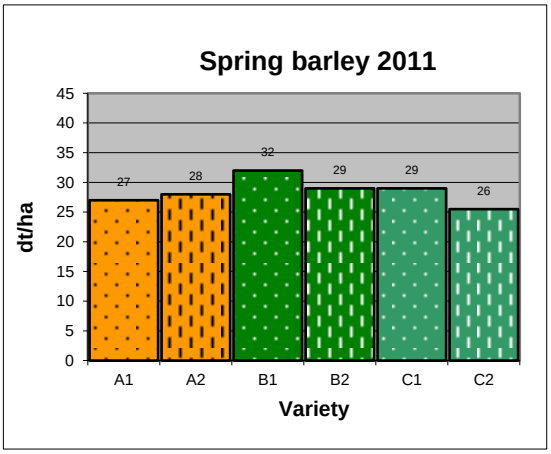
Yield



Plant emergence

Data not collected
in this trials year!

Yield



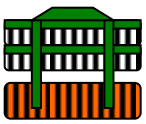
System techniques: Vladimir trials site

Trial plots for tillage, seedbed preparation and sowing

	Plot A Plough 25 cm		Plot B Mulch sowing 15 cm		Plot C Mulch sowing 8 cm	
	Plot A1	Plot A2	Plot B1	Plot B2	Plot C1	Plot C2
Stubble working	Catros 6 cm					
Tillage	Plough 25 cm		Centaur 15 cm		Catros 8 cm	
	Catros					
Seedbed and sowing	Cirrus					

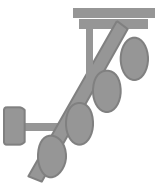
decreasing tillage intensity

Stubble cultivation



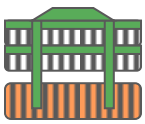
Catros in A, B & C

Soil tillage



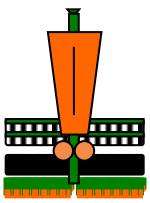
Plough in A

Centaur in B & C



(Catros in A after the plough)

Sowing

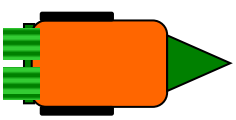


Cirrus in A, B & C

Fertilisation

ZG-B in A, B & C

Crop protection



UG in A, B & C

AMAZONE trials in Vladimir region of Russia

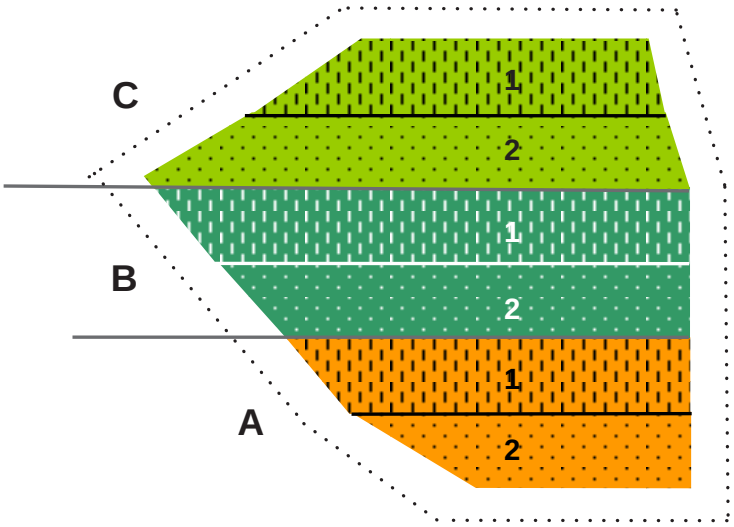
The Lednewo site lies approx. 50 km North of Vladimir and approx. 250 km east of the capital Moscow, on the axis Moscow – Kazan.

The site is located in Oblast Vladimir and belongs to the none black soil sites where typically animal production prevails.

Here, the soils tend to be heavier and difficult to operate. The average rainfall is approx. 650 mm/year.

The Lednewo trial site has existed since 2007. It is run in cooperation between the farm AOA Lednewo of the Russian consulting society Consultant Agro, the institute for agricultural technology and bio-system technology of the vTI Braunschweig and AMAZONE.

Division of the trial sites on the farm OAO Lednewo near Vladimir



Plot A is conventionally worked with the plough, the plots B and C are cultivated with a conservation mulch sowing, each with 2 seed rates.

Stubble work on all fields with the Catros compact disc harrow (6 cm working depth).

Differentiated primary soil tillage at different depths with the plough, the cultivator and the compact disc harrow.

Sowing with the trailed Cirrus seed drill (passive sowing technology).

Site data	
Soil	Clay, degraded black soil
Climate	Annual rainfall 650 mm, average temperature: 5.0°C
Crop rotation	Winter wheat, spring barley, spring rape
Tramline width	18 m

Initial results:

The first results show that the conservation system, under the continental and arid influences, can contribute to a clear increase in the yield.

Due to, in comparison to Western Europe, the inferior volumes of straw, soil tillage can be carried out at considerably reduced intensity.

Optimum conditions at the time of sowing – both in the agronomical and agrotechnical sense – allow for a distinct reduction of the site specific seed rates without resulting in any yield losses.

Trial plots for tillage, seedbed preparation and sowing

	Plot A Plough 25 cm		Plot B Mulch sowing 15 cm		Plot C Mulch sowing 8 cm	
	Plot A1	Plot A2	Plot B1	Plot B2	Plot C1	Plot C2
Stubble working	Catros 6 cm					
Tillage	Plough 25 cm		Centaur 15 cm		Catros 8 cm	
	Catros					
Seedbed and sowing	Cirrus					

decreasing tillage intensity

Yield results (dt/ha) in comparison

	Plot A Plough 25 cm		Plot B Mulch sowing 15 cm		Plot C Mulch sowing 8 cm	
	Plot A1	Plot A2	Plot B1	Plot B2	Plot C1	Plot C2
Winter wheat 09/10						
Seed rate seeds/m²	500	400	500	400	500	400
Seedling emergence (plants/m²)	300	280	330	280	315	270
Yield dt/ha	**33**	**32**	**36**	**38**	**35**	**36**
Spring barley 2011	Sonet					
Seed rate seeds/m²	400	350	400	350	400	350
Seedling emergence (plants/m²)						
Yield dt/ha	**27**	**27,5**	**32**	**29**	**28,5**	**25,5**

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