

Results of first year of official VCU trials in the Netherlands with spring wheat 2001

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Organic breeders put different requirements on spring wheat than their conventional colleagues. The first research results of the Louis Bolk Institute (LBI) in Driebergen and Applied Plant Research (PPO-AGV) in Lelystad show a lot of promising baking wheat for the organic agriculture.

The organic sector is of the opinion that the conventional research on Value for Cultivation and Use (VCU) do not bring the best varieties for organic crop growing. After all, the trials take place conventional conditions and researchers often pay less attention to the characteristics which can be of special importance to organic breeders.

Resistance against diseases in spring wheat is a good example. Conventional research does look into it but when it comes to the crunch the preference goes – according to the breeders – to crops which yield a few hundred kilograms more and not to varieties which are less susceptible to for instance Septoria. After all fungicides are relatively cheap. To organic breeders on the contrary a healthy crop is of more importance. So in conventional VCU trials those varieties which are especially of interest to the organic sector, will drop out.

Moreover the organic farmers are not only concerned with disease resistance. They also look into other characteristics which are interesting to the organic crops, such as a rapid growth and early soil coverage for weed suppression and a reasonable length of straw. The idea behind this is that fungi harming the crops from the soil, such as Fusarium and Septoria, come up less fast in longer varieties. Organic farmers do not want to be dependent on resistance genes only, but are also looking for a type of plant in which fungi develop less fast.

Another important difference with the conventional farming system is the baking quality. Traders pay an inviting premium for wheat with a high protein content and a good Zeleny index value. Organic farmers obtain the most profit with an optimum combination of yield and baking quality. This calls for different varieties than now emerge.

The Louis Bolk Institute has now permission from the Commission for the Variety List which is responsible for the VCU research, to conduct official organic VCU trials for spring wheat, see Eco-pb Newsletter of March 2002.

Comparison between conventional and organic

Last year variety trials were set up on three organic farms in the regions Friesland, Flevoland and Zeeland. The same varieties are also tested under conventional conditions in Lelystad, but the diseases were not controlled.

Comparison between the results of the organic trial and the ‘conventional’ trial without disease control teaches if and if yes, in which way the results of conventional trial are usable for advise to the organic growers, and where additional tests are necessary

In 2001 remarkable differences were seen between the trial fields, particularly with regard to disease pressure and lodging. In June there were already diseases in the conventional crop, such as powdery mildew, yellow rust and brown rust. On the organic field the diseases manifested themselves later; mildew did not occur at all.

Also many varieties which did not render problems in the organic crops with regard to lodging, went flat on the conventional fields. The differences have their origin in a lower nitrogen input with the organic trials. Because of unfavourable weather conditions in spring this came forward much stronger. After all organic crops rely for nutrition more on the mineralisation of the soil. And this started slowly because of the cold and wet spring of 2001, followed by a dry period. This can be found in the yield of the trials (see *table*). In Schoondijke (Zeeland) and Nagele (Flevopolder) the yield was disappointing.

However, one year of research is too limited to give definitive advice. The year 2001 provided in a growing season with an extreme spring. With other seasonal circumstances and disease pressure the results can turn out differently.

Lavett in Flevoland for instance had different results in 2001 in both conventional and organic respect as the years before. Kollumerwaard (Friesland) and Schoondijke kept up well with Melon, the other variety which receives a lot of attention within the Dutch organic sector. Furthermore the three new varieties ZE 98-1489, LP152.5.94 and Thasos attracted attention. If they keep this level they can be of interest in the future for organic farmers. Thasos seeds for sowing are for sale in Germany. So farmers could carefully start to experiment with these. The trials will continue in 2002 and 2003.

Tabel. Grain yield and protein content per trial in 2001.

Variety	Grain yield (relative)				Protein content %			
	Organic			Conventional 1)	Organic			Conventional 1)
	Kollumer- waard	OBS Nagele	Schoon- dijke	Lely- stad	Kollumer- waard	OBS Nagele	Schoon- dijke	Lely- stad
Baldus	105	97	95	103	10,1	9,4	11,7	11,8
Melon	105	104	117	105	10,4	9,0	11,9	11,9
Thasos	108	104	116	100	10,8	8,8	12,5	12,2
Lavett	105	96	110	95	10,3	9,5	12,0	12,2
LP 152.5.94	109	109	114	105	10,1	8,7	11,8	11,4
Vinjett	104	91	105	101	10,6	9,4	11,9	12,2
Minaret	94	106	100	97	11,2	9,5	11,9	12,0
Pasteur	104	94	111	99	12,1	10,0	12,5	12,8
ZE 98-1489	113	108	125	114	10,7	9,3	12,0	12,1
Paragon	104	97	109	104	11,4	9,3	13,1	12,5
Sunnan	97	91	101	91	11,7	10,1	12,1	12,8
100 =.. Ton/ha	8,2	4,7	5,2	7,8				

1) untreated

General remark: these are the results of one year, so no definitive conclusion can be made with regard to the varieties.