

Vital Earth Resources

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2010 Crop Results

Vitazyme on Barley, Spring

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Varieties: Skiff, Lofant, Nezabudka Soil type: gray podzolic (organic matter = 2.2%, hydrolyzed N = 8.4 mg/100 g soil, P = 15.8 mg/100 g soil, exchangeable K = 12.4 mg/100 g soil, pH = 5.5)

Previous crop: corn Planting date: April 7, 2010 Planting rate: 4 million seeds/ha

Soil preparation: disking to 6 to 8 cm, tillage to 22 cm, harrowing to 4 to 5 cm

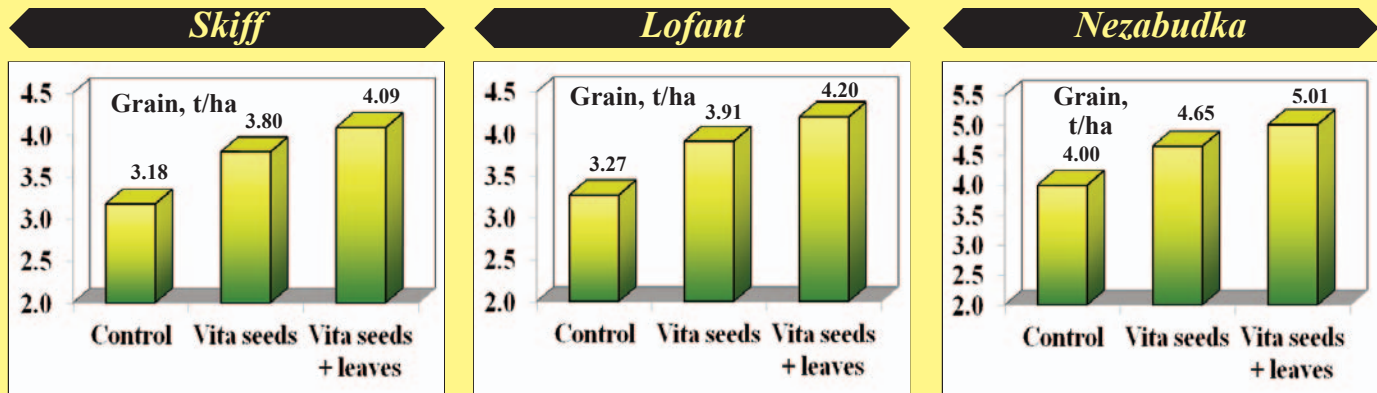
Experimental design: A spring barley plot area, using a total area of about 1.0 ha, with four replicates, was established using two Vitazyme regimes to determine the product's effect on barley yield and grain quality.

1. Control 2. Vitazyme on the seeds 3. Vitazyme on the seeds, and leaves and soil

Fertilization: 60 kg/ha N, 30 kg/ha P₂O₅, and 30 kg/ha K₂O incorporated before planting

Vitazyme application: Treatments 2 and 3, a seed treatment at 1 liter/ha; Treatment 3, an additional foliar and soil treatment of 1 liter/ha on May 15, 2010

Yield results:



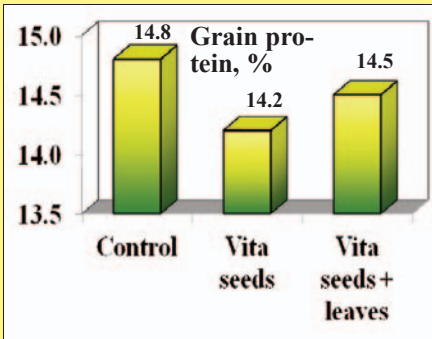
Treatment	Increase in grain yield with Vitazyme		
	Skiff	Lofant	Nezabudka
Vitazyme on seeds	0.62 (+19%)	0.64 (+20%)	0.65 (+16%)
Vitazyme on seeds + leaves	0.91 (+29%)	0.93 (+28%)	1.01 (+25%)

Profit results: All three varieties showed excellent profit increases with Vitazyme. For Skiff, the increases were 989 and 1,270 hrn/ha, for Lofant, 1,022 and 1,304 hrn/ha, and for Nezabudka, 1,022 and 1,436 hrn/ha for the seed treatment and seed treatment plus foliar treatment, respectively.

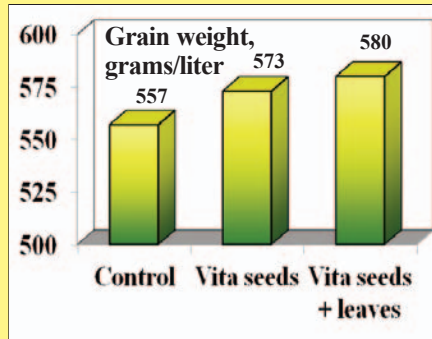
Grain quality results:

Skiff

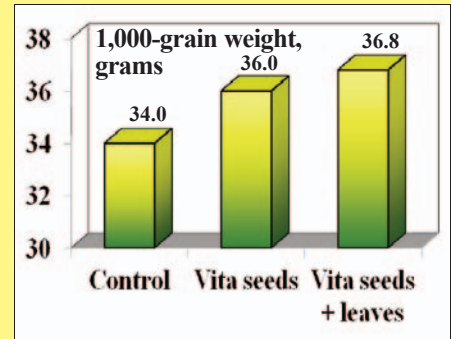
Crude Protein



Test Weight

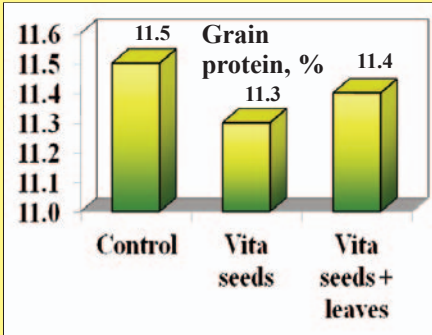


1,000-Grain Weight

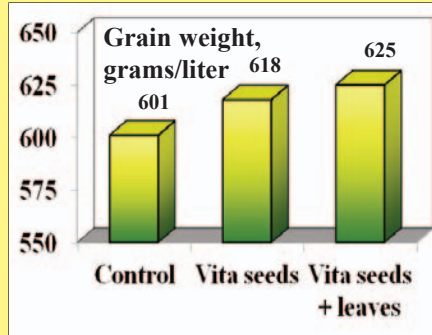


Lofant

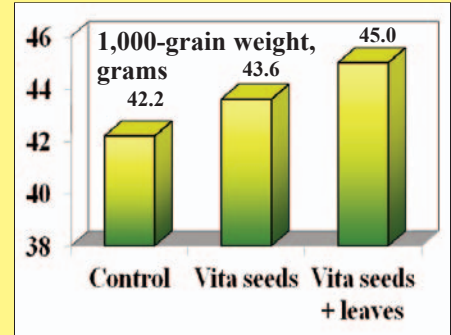
Crude Protein



Test Weight

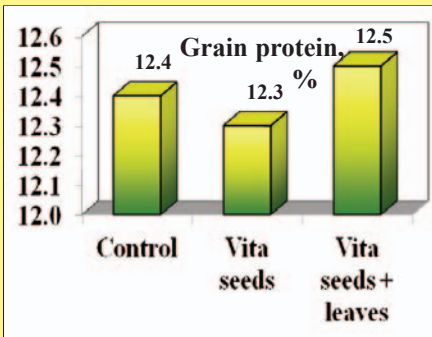


1,000-Grain Weight

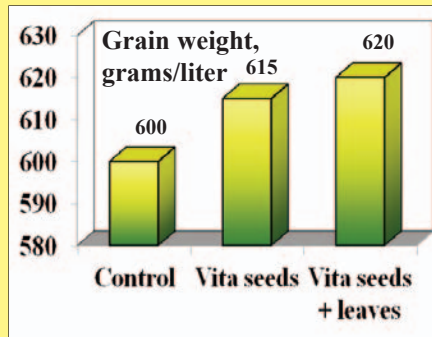


Nezabudka

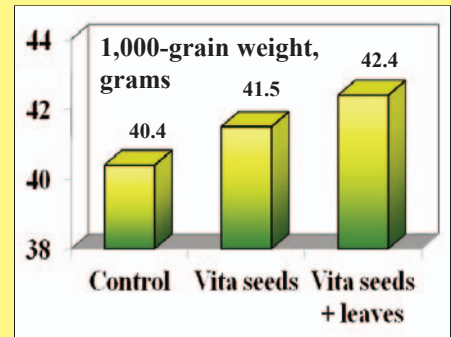
Crude Protein



Test Weight



1,000-Grain Weight



Conclusions: This replicated Ukrainian Vitazyme trial with spring barley, using three barley varieties, showed that the product in all cases benefitted the yield, profitability, and quality of the grain. These results are given in the following table.

Parameter	Vitazyme effects on spring barley		
	Skiff	Lofant	Nezabudka
Grain yield	+19 to 29%	+20 to 28%	+16 to 25%
Income	+989 to 1,270 hrn/ha	+1,022 to 1,304 hrn	+1,022 to 1,436 hrn/ha
Crude protein	-0.3 to 0.6%-pt	-0.1 to 0.2%-pt	-0.1 to +0.1%-pt
Test weight	+16 to 23 g/liter	+17 to 24 g/liter	+ 15 to 20 g/liter
1,000-grain weight	+2.0 to 2.8 grams	+1.4 to 2.8 grams	+1.1 to 2.0 grams

Yields were increased by from 16 to 20% with the seed treatment, and by 25 to 29% by the seed plus foliar treatment. Crude protein was generally decreased — a favorable result — by from 0.1 to 0.6 percentage point, except in one instance, by Vitazyme, while test weight was improved by 15 to 17 grams/liter by the seed treatment, and by 20 to 24 grams/liter by the seed plus foliar treatments. Weight for 1,000 grains likewise was raised by both treatments, by from 1.1 to 2.8 grams, more with the two treatments than with just one. These results reveal how valuable Vitazyme is for malting barley production in Ukraine.