

**Vital Earth Resources**

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**2012 Crop Results**

# Vitazyme on Spring Barley

## *A Fertilizer Rate Study*

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Research organization: National Academy of Agricultural Sciences

Location: Vinnytsia, Ukraine  
plowing, and cultivating)

Variety: Nabat super elite

Tillage: conventional (disking,

hydrolyzed N, 15.8 mg/100 g of soil P, 12.4 mg/100 g of soil exchangeable K, pH = 5.5)

Soil type: gray podzalic (2.2% organic matter, 8.4 mg/100 g of soil

Planting date: April 24, 2012

Previous crop: buckwheat

Planting rate: 4 million seeds/ha

Experimental design: A replicated plot trial with spring barley, using four replicates, was conducted on 0.1 ha plots to determine the effectiveness of Vitazyme to improve the yield and quality of spring barley. Four fertility levels were used across the treated and control plots.

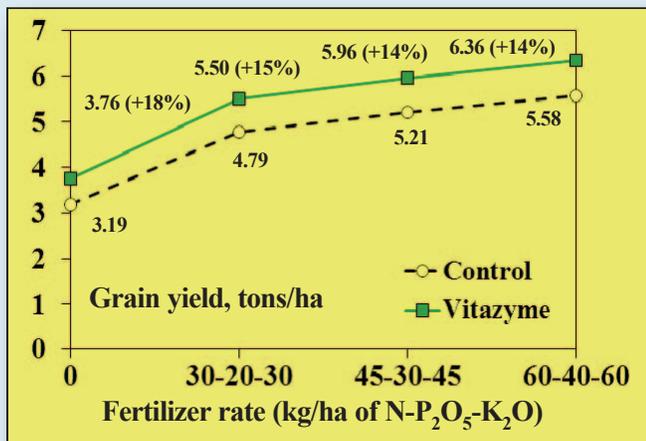
Treatment	Vitazyme	Nitrogen	Phosphate	Potash
			kg/ha	
1	0	0	0	0
2	X	0	0	0
3	0	30	20	30
4	X	30	20	30
5	0	45	30	45
6	X	45	30	45
7	0	60	40	60
8	X	60	40	60

Fertilization: Phosphorus and potassium fertilizers were applied dry in the fall with fall tillage, and nitrogen was applied in the spring.

Vitazyme application: 1 liter/ton on seeds, and 0.5 liter/ha sprayed on the leaves and soil at tillering

Weather for 2012: favorable for crop development

Yield results:



Note the fine yield increases with Vitazyme at each fertility level, from 14 to 18%.

Treatment	Income increase*
	hrn/ha
2	950
4	1,216
6	1,292
8	1,349

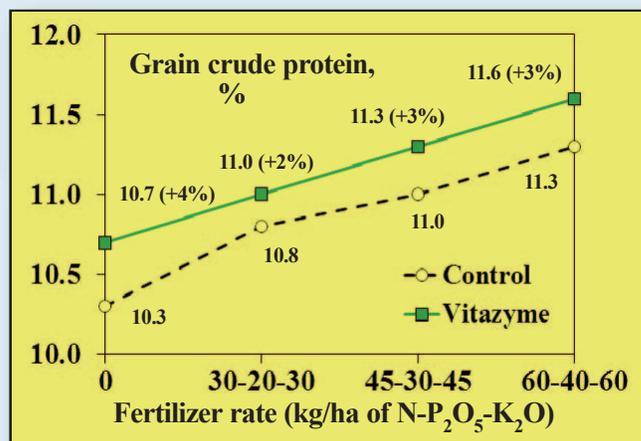
\*Comparisons are made with the untreated control at each fertility level.

**Increase in grain yield with Vitazyme at the same fertilizer level: 14 to 18%**

Crude protein results:

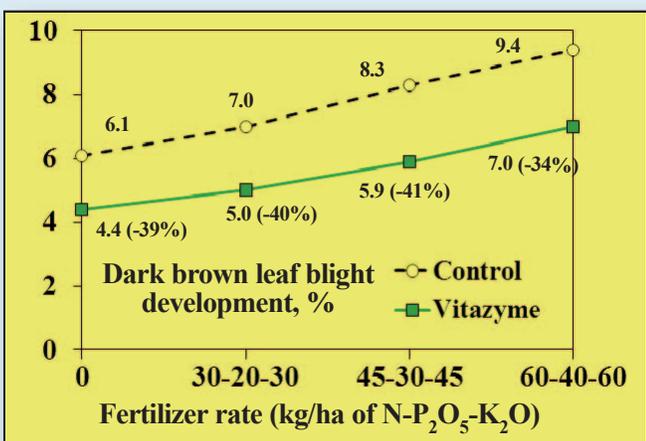
**Increase in crude protein with Vitazyme at the same fertilizer level: 2 to 4%**

All four fertilizer levels showed good protein increases with Vitazyme.



**Reduction in leaf blight with Vitazyme at the same fertilizer level: 34 to 41%**

Leaf blight results:



At all fertilizer levels the incidence of dark brown leaf blight was decreased by Vitazyme application.

Conclusions: A spring barley trial in Ukraine, using replicated plots with and without Vitazyme and four fertility levels, proved that Vitazyme increased the yield by 14 to 18% above the control, the highest percentage increase being for the lowest fertility level. Crude protein increased with Vitazyme by 0.2 to 0.3 percentage points at all fertility levels, and dark brown leaf blight development was reduced by from 34 to 41% for all four levels. These results prove that Vitazyme is a powerful tool to improve spring barley yields, protein, and plant health in Ukraine, and should be incorporated into farmers' production programs.