

Barley with Vitazyme application

Researchers: Martin Baltazar and Lucero Fernandez
Farm: Novasem
Research organization: Quimica Lucava
Location: Sayula, Jalisco, Mexico
Variety: Emerald
Planting date: January 14, 2015
Experimental design: A barley field was divided into a 1.5/ hectare Vitazyme treated area, and the remainder of the field served as a control. The purpose of the trial was to discover the effect of Vitazyme on barley yield and profitability.

1 Control 2 Vitazyme

Fertilization: Unknown
Vitazyme application: (1) 0.25 liter/ha on the seeds at planting (January 14, 2015) ; (2) 1 liter/ha sprayed on the leaves and soil 37 days after planting (February 20, 2015).
Harvest date: April 29, 2015
Yield results:

Treatment	Sample yield kg/0.175 ha	Yield kg/ha	Yield change kg/ha
Control	510	2,914	—
Vitazyme	630	3,600	686(+24%)

Increase in barley yield with Vitazyme: 24%



Barley is being given the second Vitazyme application in a Mexican trial in Jalisco. A pronounced 24% yield response resulted.

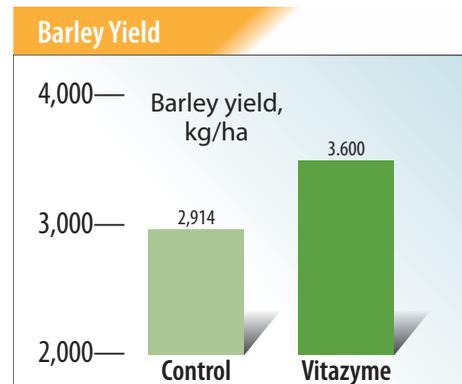
Income results:

Treatment	Yield kg/ha	Yield change kg/ha	Gross income ¹ USD/ha	Income change USD/ha	Vitazyme cost ² USD/ha	Profit USD/ha	Cost : Benefit
Control	2,914	—	874.2	—	—	—	—
Vitazyme	3,600	686	1,080.0	205.8	48.28	157.52	3.26

¹Barley price = 0.30 USD/kg ; ²Vitazyme cost (for 1.25 liters/ha) + relevant labor for 1 ha.

Increased profit with Vitazyme: 157.52 USD/ha
Cost : Benefit with Vitazyme: 3.26

Conclusion: A barley trial in Mexico, with Vitazyme applied to the seeds at planting and to the leaves and soil 37 days later, resulted in an excellent 24% grain yield increase. This increase gave 157.52 USD/ha more income, and a cost : benefit of 3.26, showing the excellent utility of the program for barley growers in Mexico.



Vital Earth Resources

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2014 Crop Results

Vitazyme on Spring Barley

Researcher: Jacob Hesseltine, Vital Grow Distribution LLC, Waterville, Washington

Farmer: Tom Stahl

Location: Waterville, Washington

Variety: Gallatin (2-row)

Planting rate: 54 lb/acre

Soil type: clay with volcanic ash

Seedbed preparation: undercutter to loosen soil; anhydrous applicator at 12-inch spacings (4-inches deep)

Previous crop: winter peas (died back from frost)

Planting date: April 30 to May 1, 2014, with an HZ Deep Furrow Drill, rows spaced 16 inches

Experimental design: Two 80-acre fields, separated by a dirt road, were selected for a spring barley study. The east field was treated once with Vitazyme, and the west field served as the untreated control. The objective was to evaluate the effect of this product on barley yield.

1. Control

2. Vitazyme

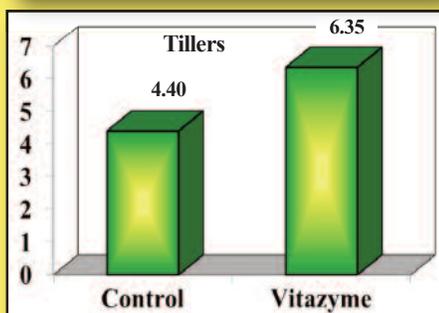
Fertilization: On April 29, 10 lb/acre of sulfur and 30 lb/acre of anhydrous ammonia were applied.

Vitazyme application: 13 oz/acre on June 24, along with Barrage (2, 4-D) at 16 oz/acre and Brox-m (bromoxomil) at 8 oz/acre; a Summers tow behind a spray rig

Crop season weather: mixed for spring grains; good July rains but moisture aided dwarf bunt development, and August 12, 13, and 15 had heavy rains

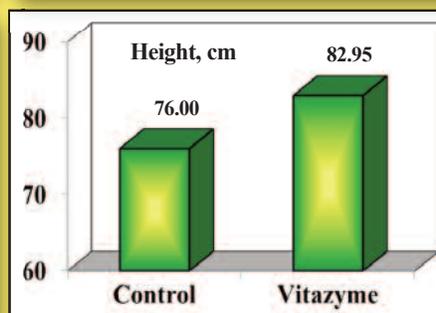
Growth results: Twenty plants were dug from each treatment on August 12, and evaluated for five parameters.

Tillers Per Plant



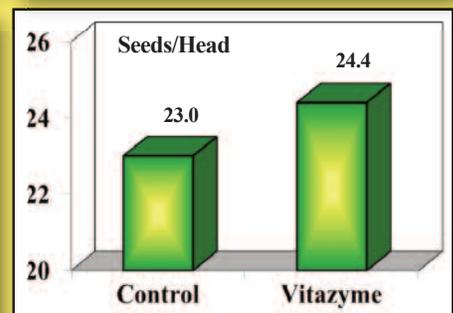
Increase in tillers per plant with Vitazyme: 44%

Plant Height



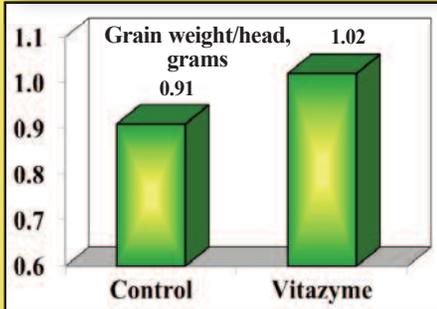
Increase in plant height with Vitazyme: 9%

Seeds Per Head



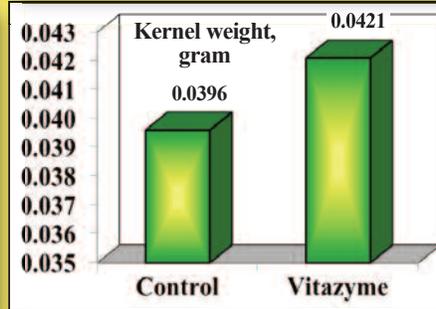
Increase in seeds per head with Vitazyme: 6%

Grain Weight Per Head



Increase in grain weight per head with Vitazyme: 12%

Kernel Weight



Increase in kernel weight with Vitazyme: 6%

Conclusions: A spring two-row barley trial in central Washington produced excellent improvements in yield traits attributable to Vitazyme. Increases were noted in tillers per plant (44%), plant height (9%), seeds per head (6%), grain weight per head (12%), and kernel weight (6%). All of these increases indicated a substantial improvement in yield, that was unfortunately not able to be quantified through direct measurement. These results display the great utility of using Vitazyme for spring barley production in Washington.

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2013 Crop Results

Vitazyme on Spring Barley

Researcher: Jacob Hesseltine

Farmer: Tom Stahl

Location: Waterville, Washington

Variety: Gallatin spring wheat

Previous crop: summer fallow

Soil type: volcanic ash

Planting date: May 7 to 10, 2013

Planting rate: 54 lb/acre

Tillage: minimum

Experimental design: A 229-acre field of spring barley was selected for this trial, the outer perimeter treated with Vitazyme to evaluate the effect of this production plant characteristics.

1. Control

2. Vitazyme

Fertilization: 40 lb/acre of N applied as anhydrous ammonia; 5 lb/acre of S

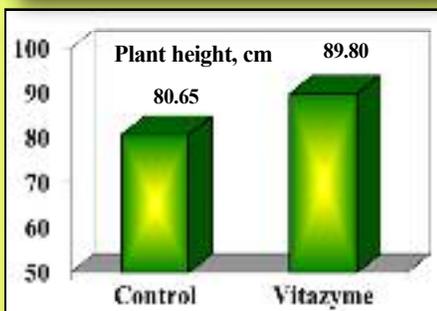
Vitazyme application: 13 oz/acre (1 liter/ha) sprayed on the leaves and soil on June 10 along with 16 oz/acre of Bromoxynil and 8 oz/acre of Barrage. A 90-foot sprayer made two passes around the field, leaving the center portion untreated with Vitazyme.

Weather for 2013: Excessive late season rain, unfavorable for crop production

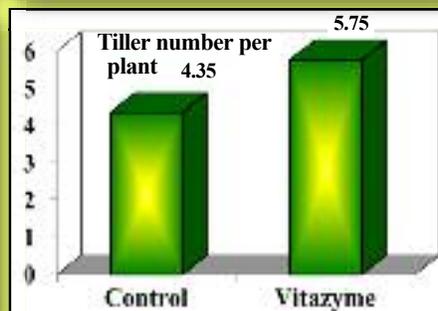
Pre-harvest evaluation: On August 9, 20 typical plants from each treatment were dug to evaluate several parameters. Values for the 20 plants were averaged.

Pre-harvest evaluation: Before harvest, 20 typical plants from each treatment were dug and evaluated for five parameters. Values for the 20 plants were averaged.

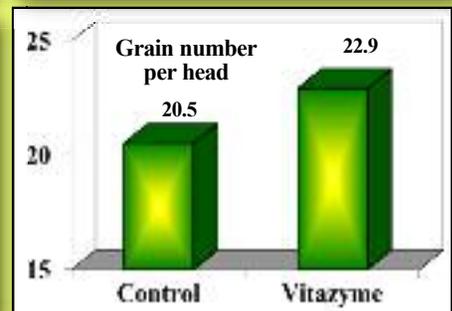
Plant Height*



Productive Tillers/Plant

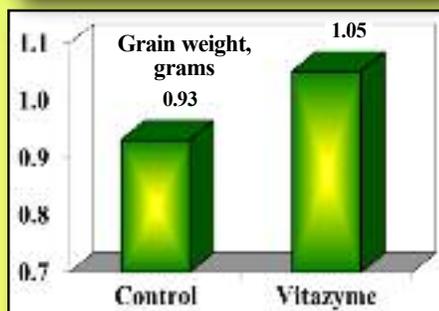


Grains Per Head

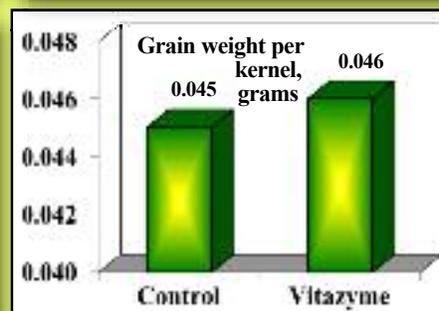


*Measured from soil level to tip of tallest tiller.

Grain Weight Per Head



Grain Weight Per Kernel



Yield results: none

Conclusions: This central Washington spring barley trial revealed that Vitazyme improved all plant and grain parameters, especially productive tillers per head (+32%), but grains per head (+12%) and grain weight per head as well (+13%); kernel weight was slightly increased. These data show that the yield was certainly enhanced with Vitazyme even though yield values were not obtained.

Increases with Vitazyme:

Plant height	11%
Productive tillers/plant	32%
Grains per head	12%
Grain weight/head	13%
Grain weight/kernel	2%