

# AgZyme<sup>®</sup> and AgConcepts<sup>®</sup> SuperHume<sup>®</sup>

## Increase US#1 Potato Yield by 24.2 cwt

AgZyme and Pervaide increase US#1s by 20.6 cwt  
and one application of AgZyme increase US#1s by 25.4 cwt

Ag Concepts<sup>®</sup> Corp worked with the University of Idaho on a study investigating the effects of AgZyme<sup>®</sup>, AgZyme<sup>®</sup> and Pervaide, and AgZyme<sup>®</sup> with Ag Concepts<sup>®</sup> Super Hume on Russet Burbank potatoes. Results showed numerical increase of US#1 grade potatoes for each application over check. The best results, 25.4 cwt increase of US#1s, were observed when 12.8 oz per acre of AgZyme<sup>®</sup> was applied at planting. An increase of 24.2 cwt was seen when 12.8 oz applications of AgZyme<sup>®</sup> with 1 gallon of Ag Concepts<sup>®</sup> Super Hume. Finally, an increase of 20.6 cwt of US#1 was achieved when 12.8 oz per acre of AgZyme<sup>®</sup> was followed with 2 qts per acre of Pervaide. The US#1 yield comparison can be seen in Fig 1.

Each treatment with Ag Concepts<sup>®</sup> products produced a higher yield percentage of US#1s. AgZyme<sup>®</sup> with Ag Concepts<sup>®</sup> Super Hume had the best percentage with 50.9% US#1s. The single application of AgZyme<sup>®</sup> followed at 47.8% US#1s, AgZyme<sup>®</sup> with Pervaide had 46.1% US#1s. The check treatment only had 43.5% US#1s. This is illustrated in Fig 2.

AgZyme<sup>®</sup> with Pervaide had the highest overall yield at 273.6 cwt. The single application of AgZyme followed at 273.1 cwt and AgZyme<sup>®</sup> with Ag Concepts<sup>®</sup> Super Hume yielded 251.6 cwt overall. The check application yielded only 241.3 cwt

Fig 1: Yield of US#1s in cwt

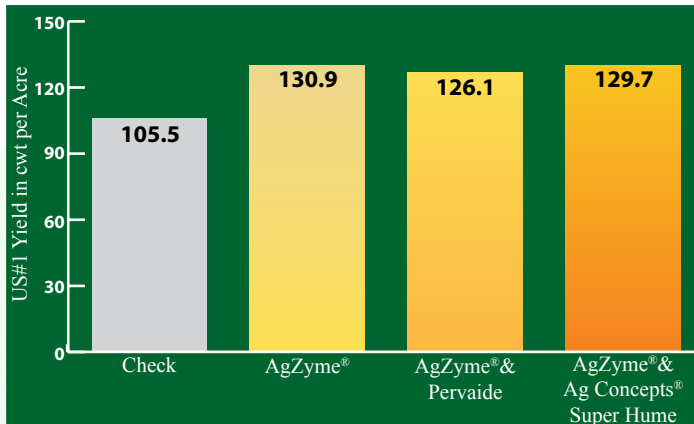


Fig 2: Percentage of US#1s

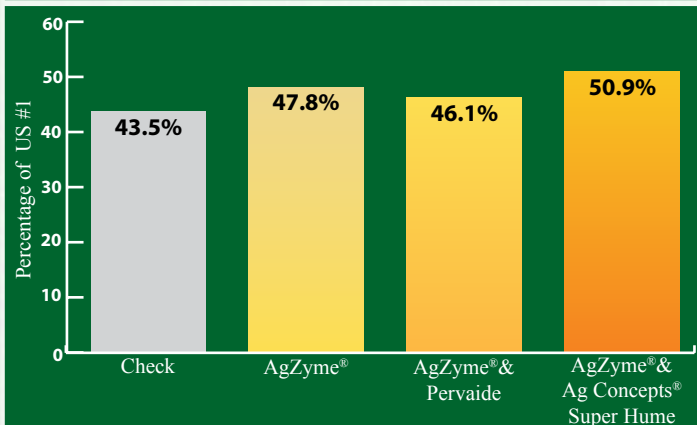
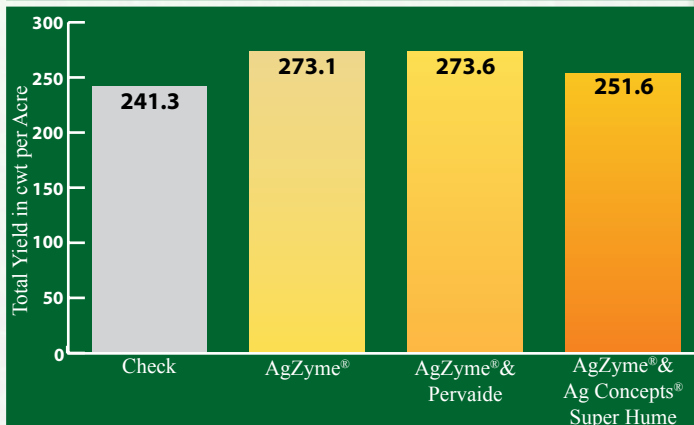


Fig 3: Total Yield



# AgZyme<sup>®</sup> and AgConcepts<sup>®</sup> SuperHume<sup>®</sup>

## Increase US#1 Potato Yield by 38.5 cwt

AgZyme and Pervaide increase #1s by 21.7 cwt  
and two applications of AgZyme increase #1s by 26.3 cwt

Ag Concepts<sup>®</sup> Corp worked with Liberty Ag Research on a study investigating the effects of AgZyme<sup>®</sup>, AgZyme<sup>®</sup> and Pervaide, and AgZyme<sup>®</sup> with Ag Concepts<sup>®</sup> Super Hume on Shepody potatoes. Results showed numerical increase of US#1 grade potatoes and overall yield for each application over check with greater increases achieved by combining products. The best results, 38.5 cwt increase of US#1s, were observed when 12.8 oz per acre of AgZyme<sup>®</sup> was applied with 1 gallon of Ag Concepts<sup>®</sup> Super Hume. An increase of 26.3 cwt was seen when 12.8 oz of AgZyme<sup>®</sup> was applied at planting and again six weeks after planting. Finally, an increase of 21.7 cwt of US#1 was achieved when 12.8 oz per acre of AgZyme<sup>®</sup> was followed with 2 qts per acre of Pervaide. A single application of AgZyme<sup>®</sup> increased US#1 yield by 22.2 cwt.

Each treatment with Ag Concepts<sup>®</sup> products produced a higher yield percentage of US#1s. As with weight of US#1s, Ag Concepts<sup>®</sup> Super Hume had the best percentage of US#1s at 78.7% US#1s. Two applications of AgZyme<sup>®</sup> had 76.4% US#1 while AgZyme<sup>®</sup> with Pervaide had 76.2% US#1. The check treatment only had 72.2% US#1s. This is illustrated in Fig 2. The single application of AgZyme<sup>®</sup> yielded 64.5% US#1s.

Overall yields varied slightly from US#1s. AgZyme<sup>®</sup> with Ag Concepts<sup>®</sup> Super Hume had the best overall yield of 335.0 cwt. Two applications of AgZyme<sup>®</sup> yielded 328.5 cwt overall, and AgZyme<sup>®</sup> with Pervaide yielded 324.1 cwt. The check treatment yielded 312.0 cwt. This is illustrated in Fig 3. The single application of AgZyme<sup>®</sup> had 329.3 cwt in overall yield.

The increases in weight of US#1s for AgZyme<sup>®</sup> with Ag Concepts<sup>®</sup> Super Hume and two applications of AgZyme<sup>®</sup> were statistically significant to the 95th confidence interval. The increase in percentage of US#1s was also statistically significant for the AgZyme<sup>®</sup> with Ag Concepts<sup>®</sup> Super Hume, two applications of AgZyme<sup>®</sup>, and AgZyme<sup>®</sup> with Pervaide.

Fig 1: Yield of US#1s in cwt

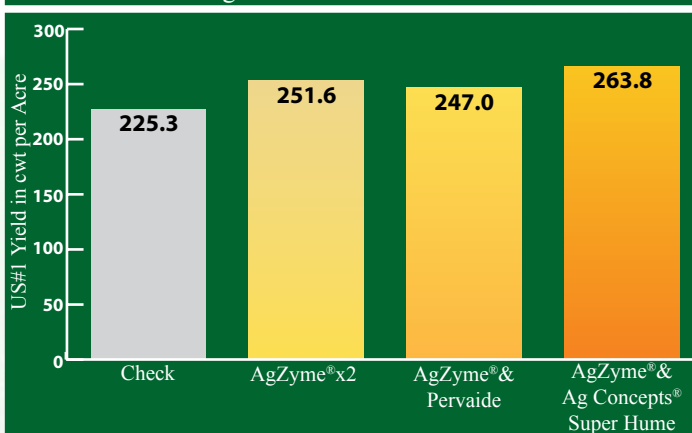


Fig 2: Percentage of US#1s

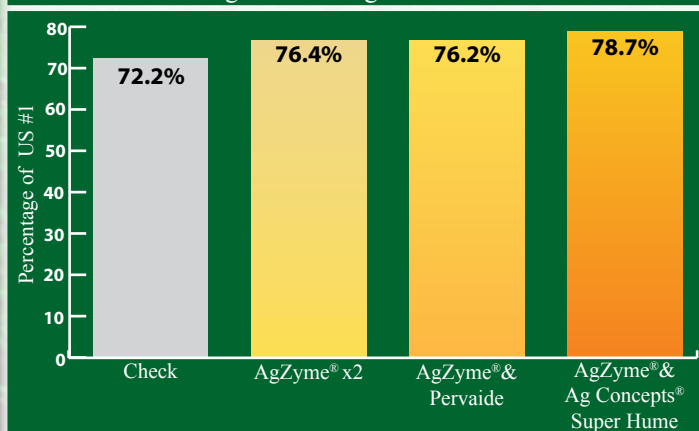
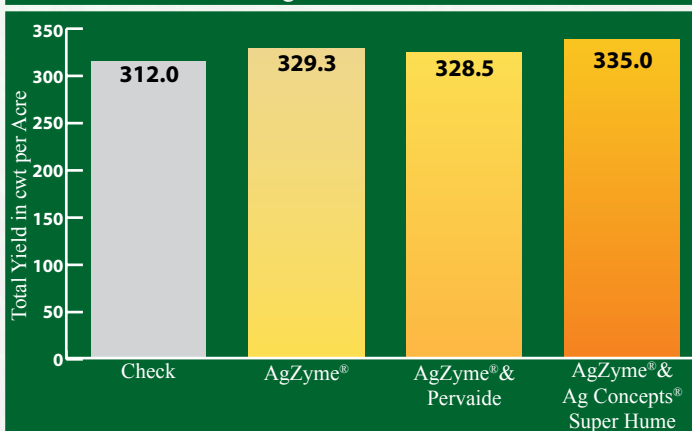


Fig 3: Total Yield





# AgZyme<sup>®</sup> Increases Yield by 82.2 cwt With 47.7 cwt increase on US#1 Grade

## Separate Field Shows Increases of 5.6 cwt Overall and 24.3 cwt of US#1 On Russet Burbank Potatoes in American Falls, Idaho

Working with Lloyd Haderlie of Agra Serv Inc in American Falls, Idaho Ag Concepts Corp commissioned a study on the effect of 12.8 oz of AgZyme<sup>®</sup> when treating Russet Burbank Potatoes. Two fields were each split between treated and untreated application. Six samples digs of five feet by four rows were taken from each side of each field. When yield results and grading was completed the sides treated with AgZyme<sup>®</sup> showed increases in both overall yield and yield of US#1 grade.

The AgZyme<sup>®</sup> treated side of the first field yielded 483.5 cwt overall versus 401.3 cwt for the check side (Fig 1). Additionally, grading of the first field showed 342.3 cwt for the AgZyme<sup>®</sup> treated side against only 294.6 cwt for the untreated side (Fig 2).

The second field also showed increases on the AgZyme<sup>®</sup> treated side, but not as pronounced. Overall yield increased to 396.5 cwt with AgZyme<sup>®</sup> over the 372.2 cwt yield of the check side (Fig 3). US#1 yield was 226.8 for the AgZyme<sup>®</sup> side, versus 221.2 for the check (Fig 4).

Fig 1: Field 1 Overall Potato Yield

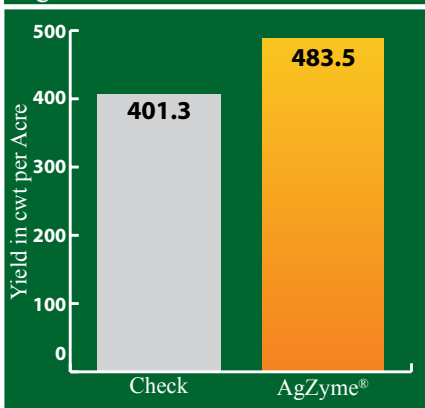


Fig 2: Field 1 US#1 Yield

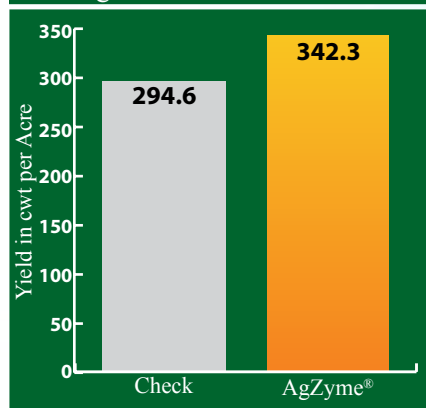


Fig 3: Field 2 Overall Potato Yield

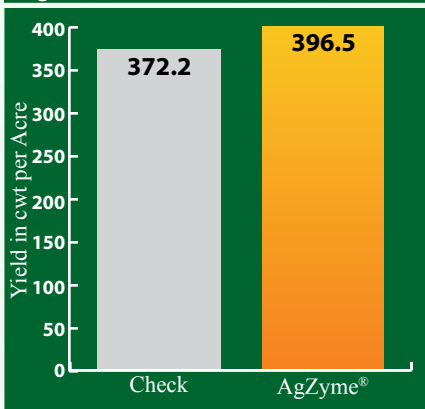
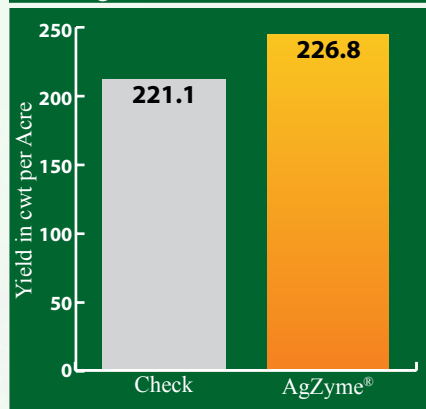


Fig 4: Field 2 US#1 Yield

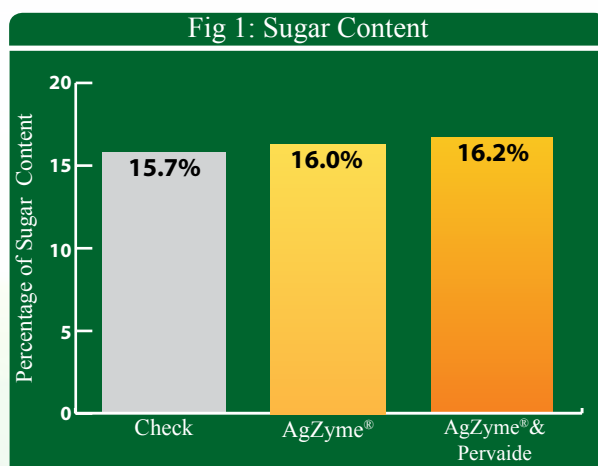


# AgZyme<sup>®</sup> and Pervaide Increase Sugar Content by 0.5%

With 184 Pound Increase in Total Sugar  
AgZyme<sup>®</sup> increase content by 0.3% and total sugar by 199 pounds  
On Sugar Beets at the University of Minnesota

Working with Albert Sims of The University of Minnesota at the Northwest Research and Outreach Center Ag Concepts Corp commissioned a study on the effect of AgZyme<sup>®</sup> and Pervaide on Sugar Beets. Yield and sugar content were examined. Numerical increases in sugar content and total sugar were observed, but no statistical difference was noted.

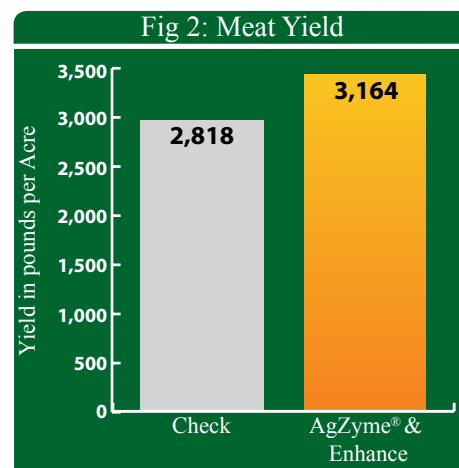
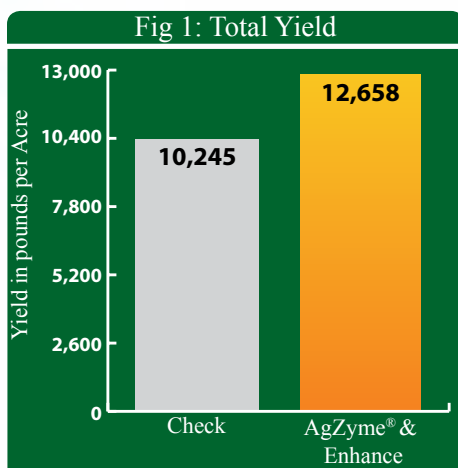
The treatment of 12.8 oz AgZyme<sup>®</sup> with the starter followed by 1qt of Pervaide 3 weeks and 6 weeks after planting yielded the best percentage of sugar at 16.2%, equating to 9,669 total pounds. 12.8 oz of AgZyme<sup>®</sup> with the starter had 16.0% sugar, 9,684 total pounds. The control yielded 9,485 pounds of sugar at 15.7%.





# AgZyme<sup>®</sup> and Enhance Increase Meat Yield by 346 lbs On Almonds at Agricultural Advisors Inc, in Live Oak, California

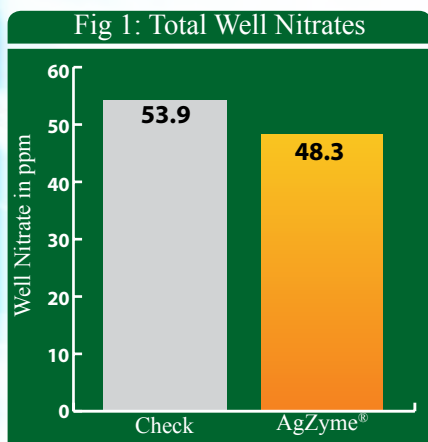
Ag Concepts Corp commissioned a study on the effect of AgZyme<sup>®</sup> and Enhance on Almonds with John Post of Agricultural Advisors Inc, in Live Oak, California. 12.8 oz of AgZyme<sup>®</sup> and 1 gal of Enhance were applied early season, followed 6 weeks later with another 12.8 oz application of AgZyme<sup>®</sup>. Total yield in pounds per acre and yield of meat per acre was examined. The application of AgZyme<sup>®</sup> and Enhance yielded a total of 12,658 lbs per acre and 3,164 lbs of meat per acre. The untreated control yielded 10,245 total lbs per acre with 2,818 lbs of meat per acre. This is an increase of 2,413 total lbs and 346 lbs of meat per acre.



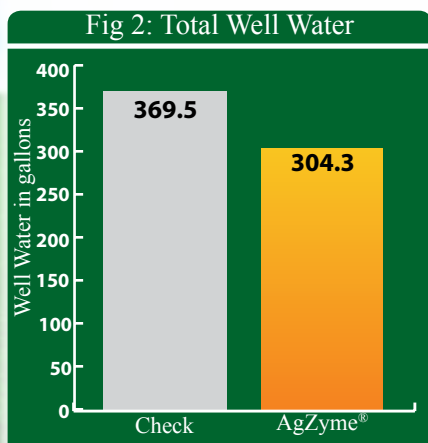
# AgZyme® Decreases Nitrate Leaching by 10% Increases Ear Protein by 28% and Yield by 12 Bushel

Bottom Line: More nitrates building protein in the ear, less in the aquifer

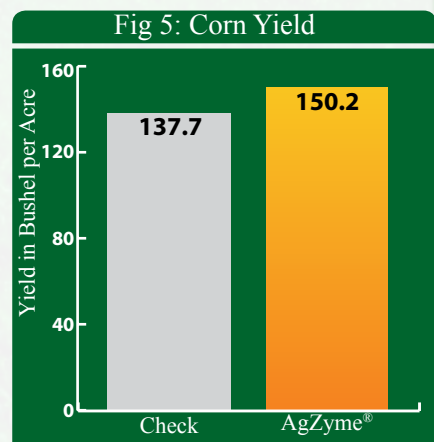
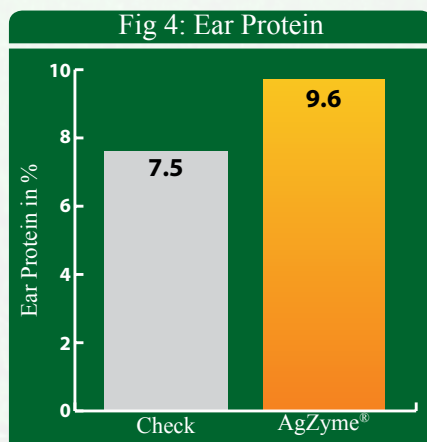
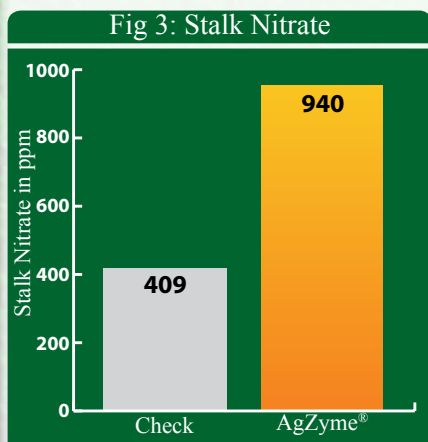
In a five year study AgZyme® from Ag Concepts® Corp showed a decrease in nitrate leaching by a yearly average of 42%. Although this is an exciting result, and very important for managing release of nutrients to the environment, the study did not explore the fate of the reduced nitrates. To answer this question, Arise Research and Discovery completed a study that examined the nitrate leaching, soil nitrates, stalk protein, and ear protein.



Arise Research and Discovery has the unique ability to collect and sample water in hydraulically isolated test plots (Lysimeter Well). Each plot consists of a growth area flanked with bay walls extending 42 inches into the soil. Natural nutrient channels and a four inch wide tile, located at the center of the plot below the growing area, drain into a collection and sampling well located at the end of the plot. Water and other inputs that are applied to the crop eventually drain to the well where they can be collected and measured.



As expected, AgZyme® showed a decrease in total nitrates that were leached as compared to untreated plots, 48.3 ppm vs 53.9 ppm, or 10% less (Fig1). The difference in nitrate leaching between the treated and untreated plots increased as the season went on, indicating more use of nitrates by the plants on the AgZyme® plots. Additionally, water use efficiency increased as the AgZyme® plot collected less water 304.3 gal vs 369.5 gal in the well. Increased stalk nitrate (Fig3) and ear protein levels (Fig4) at the end of the season indicate better nitrogen use and less leaching with AgZyme® treatment. This means that less nitrate was lost to the environment, allowing more to be used by the plant and more protein in the ear. A yield increase of 12.5 bushel per acre, 150.2 vs 137.7 was a the final result of the AgZyme® treatment (Fig5). Increase in yield, ear protein, and stalk nitrates were statistically significant to the 95th confidence interval.



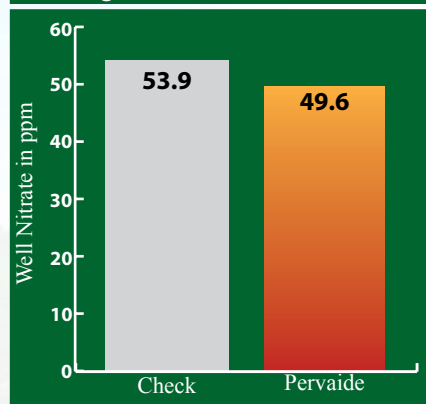


# Pervaide Decreases Nitrate Leaching by 8%, Increases Ear Protein by 21.3% and Yield by 6.8 Bushel

Bottom Line: More nitrates building protein in the ear, less in the aquifer

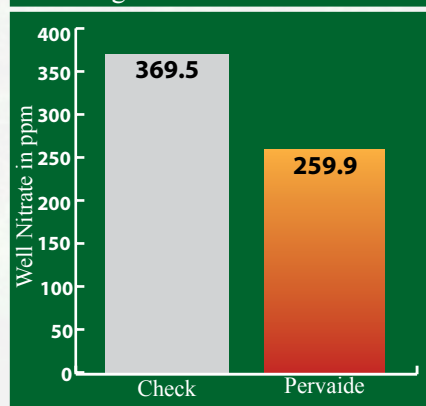
In a two year study, Pervaide from Ag Concepts® Corp showed a decrease in nitrate leaching by a yearly average of 41%. Although this is an exciting result, and very important for managing release of nutrients to the environment, the study did not explore the fate of the reduced nitrates. To answer this question, Arise Research and Discovery completed a study that examined the nitrate leaching, soil nitrates, stalk protein, and ear protein.

Fig 1: Total Well Nitrates



Arise Research and Discovery has the unique ability to collect and sample water in hydraulically isolated test plots (Lysimeter Well). Each plot consists of a growth area flanked with bay walls extending 42 inches into the soil. Natural nutrient channels and a four inch wide tile, located at the center of the plot below the growing area, drain into a collection and sampling well located at the end of the plot. Water and other inputs that are applied to the crop eventually drain to the well where they can be collected and measured.

Fig 2: Total Well Water



As expected, Pervaide showed a decrease in total nitrates that were leached as compared to untreated plots, 49.6 ppm vs 53.9 ppm, or 8% less (Fig1). The difference in nitrate leaching between the treated and untreated plots increased as the season went on, indicating more use of nitrates by the plants on the Pervaide plots. Additionally, water use efficiency increased as the Pervaide plot collected less water 259.9 gal vs 369.5 gal in the well. Increased stalk nitrate (Fig3) and ear protein levels (Fig4) at the end of the season indicate better nitrogen use and less leaching with Pervaide treatment. This means that less nitrate was lost to the environment, allowing more to be used by the plant and more protein in the ear. A yield increase of 6.8 bushel per acre, 144.5 vs 137.7 was a the final result of the Pervaide treatment (Fig5). Increase in yield, ear protein, and stalk nitrates were statistically significant to the 95th confidence interval

Fig 3: Stalk Nitrate

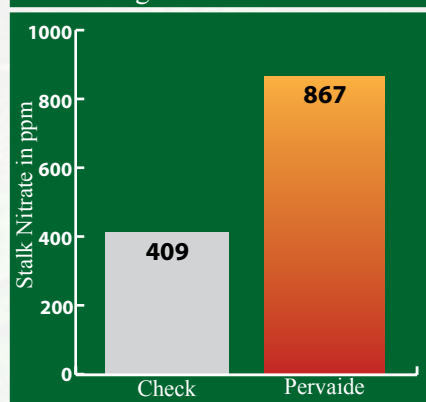


Fig 4: Ear Protein

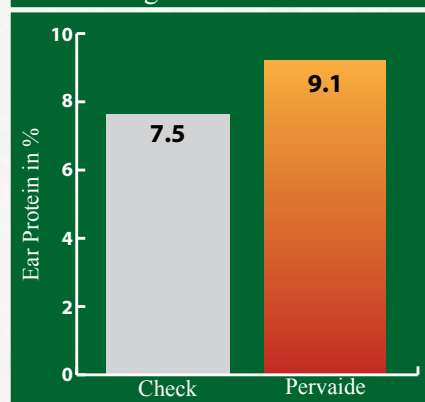
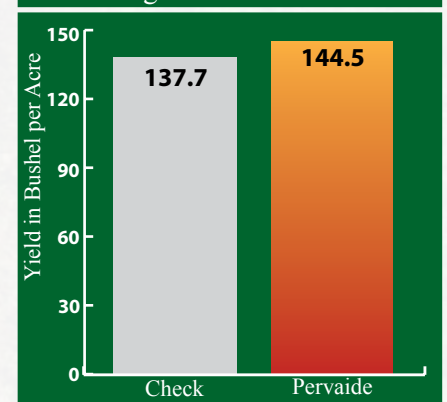


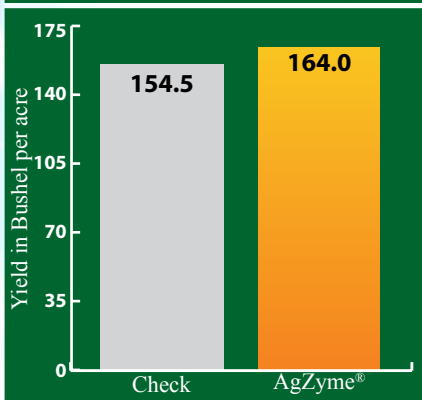
Fig 5: Corn Yield



# AgZyme Increases Yield by 9.5 Bushel per Acre On Strip-Till Corn in Martinsville, IL by Dr. Roy Stephen of Arise Research and Discovery

Strip Tilling, a system that includes tillage only in narrow strips where the seed rows are planted, is gaining in popularity in the agriculture industry. Ag Concepts Corp has recognized the benefits of strip-tillage and commissioned a study at Arise Research and Discovery to examine the effect of AgZyme® on corn grown using this system. 12.8 oz of AgZyme® was applied at planting with a standard fertility program to the treated plots, standard fertility alone was used on the control plots.

Fig 1: Total Corn Yield



Results showed an increase in yield for the plot treated with AgZyme®. Yield with the AgZyme® treatment was 164.0 bu/acre versus 154.5 bu/acre for the control. This increase of 9.5 bu/acre was statistically significant to the 95th confidence interval.



# AgZyme® Increases Recoverable Sugar by 1178 pounds

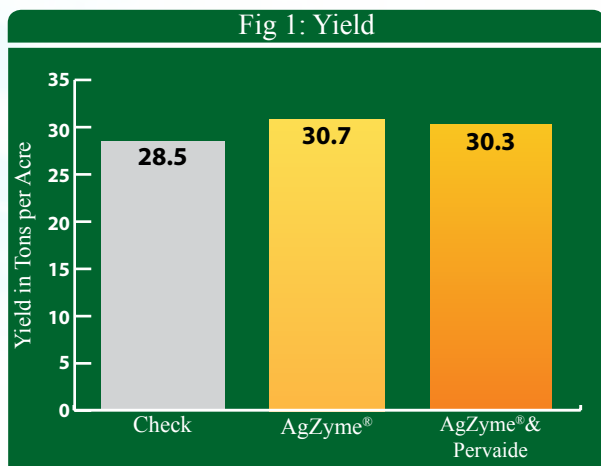
## With Increases of 0.7% Sugar Content and 2.25 Tons in Yield

### AgZyme® and Pervaide increase total sugar by 735 pounds

#### On Sugar Beets at Irrigation Research Foundation

Working with Irrigation Research Foundation of Yuma, Colorado Ag Concepts Corp commissioned a study on the effect of AgZyme® and Pervaide on Sugar Beets. Yield and sugar content were examined. Each treatment showed increases in yield, sugar content, and recoverable sugar.

Fig 1: Yield



19.2 oz of AgZyme® with the starter yielded 30.7 tons with 17.3% sugar, for a total of 10,647 pounds of recoverable sugar. The second treatment, 12.8 oz AgZyme® with the starter followed by 2 qts of Pervaide 30 days later yielded 30.3 tons with 16.9% sugar, for a total of 10,204 pounds of sugar. The control yielded only 28.5 tons with 16.6% sugar for 9,469 pounds of sugar.

Fig 2: Sugar Content

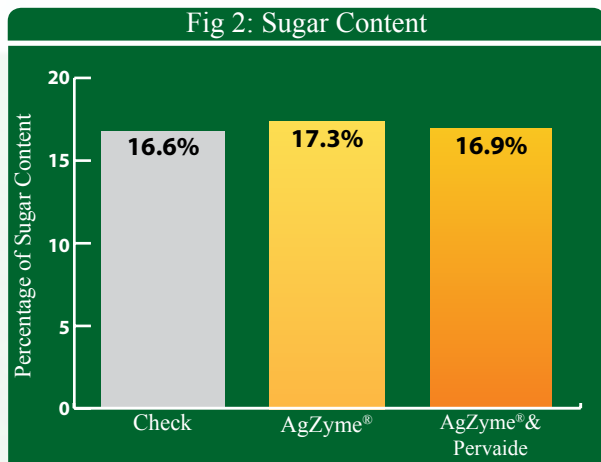
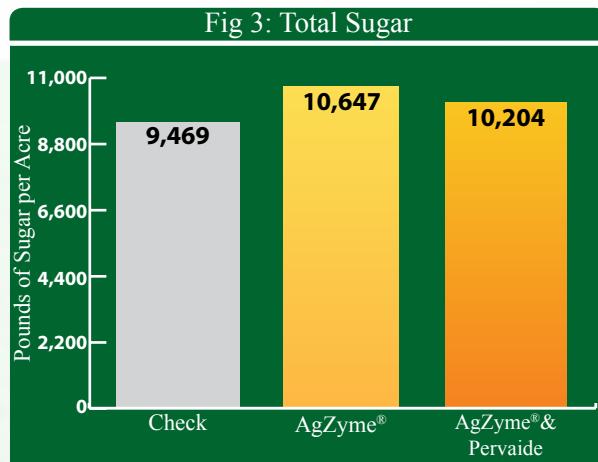


Fig 3: Total Sugar

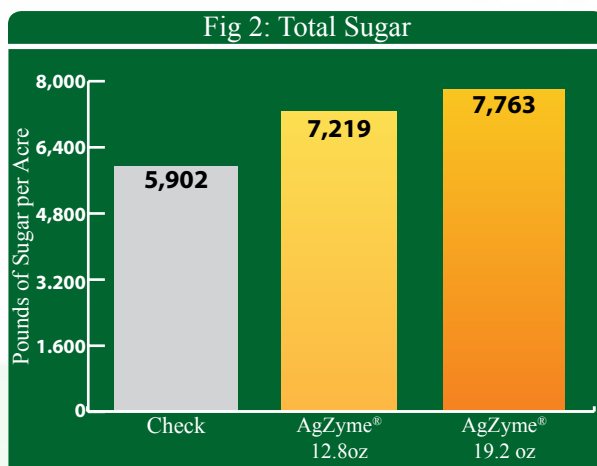
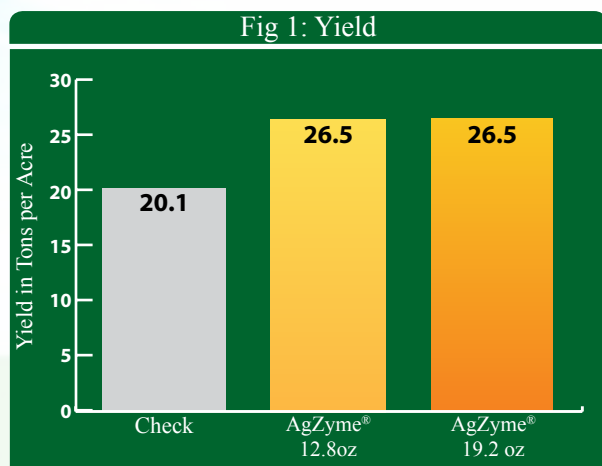


# AgZyme® Increases Recoverable Sugar by 1,861 pounds

## With Yield Increase of 6.4 Tons in Maynard, Minnesota

SMBSC of Minnesota examined several products that retailers in the local area were offering for use as pop-up products for enhancement of sugar beet production. The test was completed at a research facility in Maynard, MN and results were published. Two treatments of AgZyme®, 12.8oz and 19.2oz, were included in the study. Yield and sugar content were examined and total sugar was calculated. Both treatments showed statistically significant increases in yield and recoverable sugar.

The first treatment, 12.8 oz AgZyme® with the starter yielded 26.5 tons with 16.1% sugar, for a total of 7,219 pounds of sugar. The second treatment, 19.2 oz of AgZyme® yielded 26.5 tons with 16.9% sugar, for a total of 7,763 pounds of recoverable sugar. The control yielded only 20.1 tons with 17.1% sugar for 5,902 pounds of sugar.

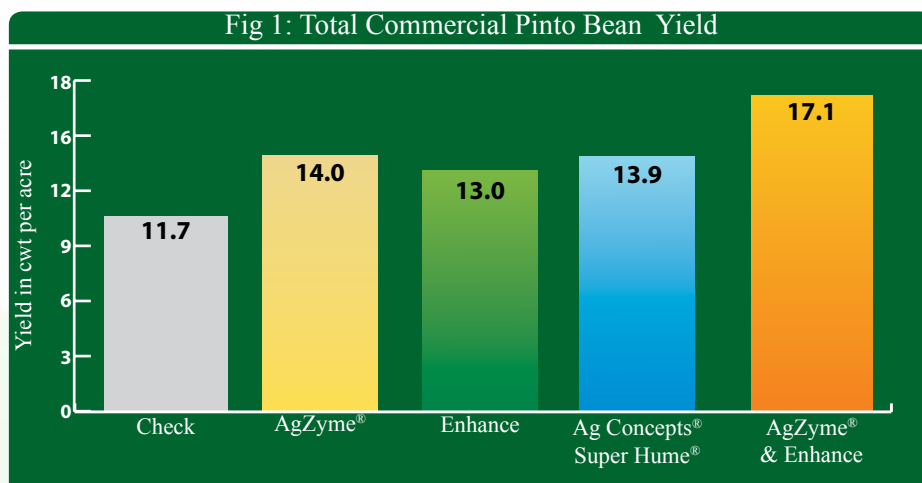




# AgZyme and Enhance Increase Yield by 5.3 cwt per Acre On Commercial Pinto Beans in Martinsville, IL by Dr. Roy Stephen of Arise Research and Discovery

Ag Concepts Corp worked with Arise Research and Discovery on a study to examine the effect of AgZyme<sup>®</sup>, Enhance, and Super Hume on commercial pinto beans. The treatments were 12.8 oz of AgZyme<sup>®</sup> applied with the starter, 2qts of Enhance applied at early bloom, 1 gallon of Ag Concepts<sup>®</sup> Super Hume<sup>®</sup> applied with the starter, and 12.8oz of AgZyme<sup>®</sup> with the starter followed by 2qts of Enhance applied at early bloom. The growing year was poor but all treatments showed statistically significant increases in yield.

The first treatment, AgZyme<sup>®</sup> alone, yielded 14.0 cwt/acre. Enhance alone yielded 13.0 cwt/acre. Ag Concepts<sup>®</sup> Super Hume<sup>®</sup> yielded 13.9 cwt per acre. The combination of AgZyme<sup>®</sup> followed by Enhance has the best yield at 17.1 cwt/acre. The check yielded 11.7 cwt/acre.



# **Pervaide and Enhance** Each Increase Yield by 0.5 Ton

Both Treatments also Increase Relative Feed Value  
on Alfalfa at Irrigation Research Foundation in Yuma, Colorado

Working with Irrigation Research Foundation of Yuma, Colorado Ag Concepts Corp commissioned a study on the effect of Pervaide and Enhance on Alfalfa. Yield and relative feed value were examined with each treatment showing increases.

Two quarts of Enhance were applied at dormancy break, and after each of the first three of four cuttings. Total yield of all cuttings was 6.7 tons versus 6.2 tons for the control. Average relative feed value was also better for the Enhance treatment at 188.8 versus 175.8 for the control. Two quarts of Pervaide were applied at dormancy break and after each of the first three cuttings. Total yield for the Pervaide treatment was also 6.7 tons, and the average relative feed value was 181.0

