

# Bio Huma Netics, Inc. World Conference

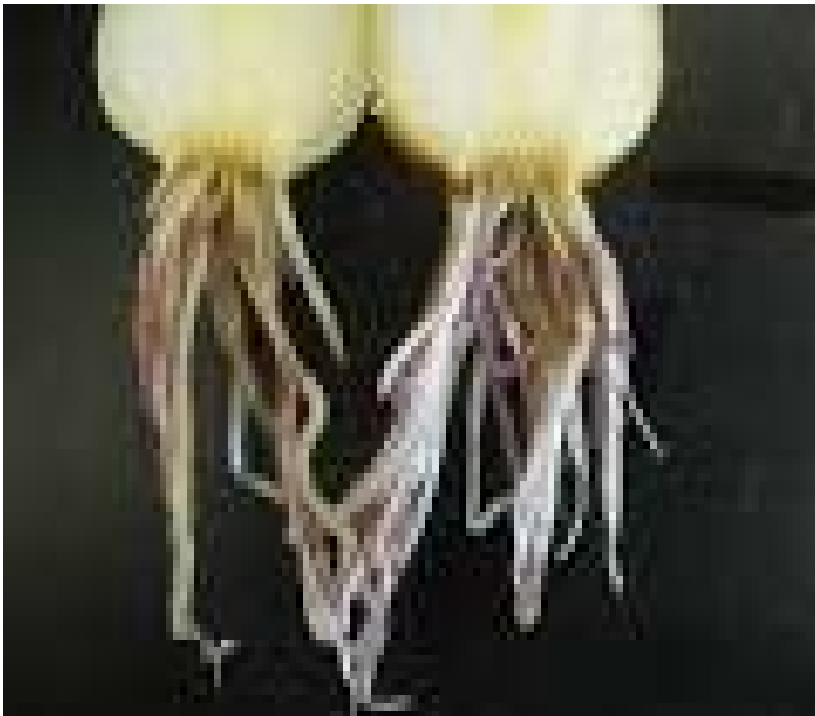
What has happened from 2012-2014?

1. ProMax on onions (Idaho and ND)
2. New work in vegetable seed production

# ProMax on Onions

## Weiser, Idaho

- Pink Root: *Phoma terrestris*, fungal pathogen



# Control of Pink Root

- Fumigation: Telone C-17 at 20-30 gallons per acre must be applied directly under the seed
- Rotation: This is a soil fungal pathogen and is more prevalent following grain
- Stress: Pathogen is enhanced when onions are under stress

# ProMax

- In 2013, I was contacted by Farmers Supply Co-op, Weiser, Idaho, with a question concerning the effectiveness of ProMax on Pink Root
- We had no research on it but they bought 20 gallons to use on a field that was going to be planted next to a school

# Telone on left and ProMax on right 6/23/13





# Telone on left and ProMax on right 8/4/13





# Telone on left and ProMax on the right 9/23/14



# Evaluation and comparison of Telone and ProMax

- 20 gallons of Telone cost about \$400 per acre while 1.5 gallon ProMax cost about \$100 per acre
- Telone application requires a plan and permit from the department of ag and ProMax does not
- Many “set backs” and restrictions with Telone but not with ProMax



# Evaluation Continued

- Telone is highly toxic to humans and environment while ProMax is not
- Telone had a 4.7% yield increase over ProMax but the grower said he would use ProMax again

# 2014 ProMax in Idaho

In 2014 more acres were under ProMax. Some were still compared to Telone and some were stand alone

Looking at 2015, Farmers Supply Co-op is going to look at more ways to use ProMax during the growing season. Maybe lower rates but used more often

# 2014 ProMax onions of right of both pictures 7/1/14





# ProMax on right of both pictures 8/4/14





# Why Does ProMax Work?

- Combination of Tymol, amino organic acids and salicylic acid
- Tymol suppress the pathogen, organic acids stimulate root development and soil biology, and salicylic acid reduces stress by triggering systemic acquired resistance (SAR)
- If the plant is happy and the negative impact of the pathogen is managed, all is good

# Boyd Peterson, FSC, on the Left and Ben Hammalmen on the Right



# Enhancing Red Beet Seed Production and Quality

- Western Washington, Skagit County, produces 80% of the US and 50% of the worlds red beet seed
- Grown as biennial: beet bulb grown one year, vernalized overwinter, planted in seed production fields in following year
- Challenge: poorly developed bulbs turn into weak plants in the spring giving low yields



# Problems with poor quality bulbs

**Low bulb vigor gives poor stand**



**Poor quality bulb w/internal decay**





# Increase the Bulb Vigor Before Vernalization

- We wanted to see if we could get a better quality bulb before they were dug and put into the earth pit for over wintering
- We wanted to increase the flow of sugars into the bulb and used Breakout and Golden Gro at a .5% and 1% solution rate
- We harvested the seed from these bulbs by hand in order to generate yield and quality data

# Results in Yield and 500 Seed Count Weights

- UTC      3,969 lb/acre      Seed Wt. 16.25grams
  - .5% BO   4,744 lb/acre      Seed Wt. 19.0 grams
  - .5% GG   4,046 lb/acre      Seed Wt. 21.0 grams
  - 1.0%GG   5,366 lb/acre      Seed Wt. 20.0 grams
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- BO= Breakout
  - GG= Golden Gro

# Results Summary

- .5% BO had a 16.33% increase in yield and a 14.5% increase in seed weight
- .5% GG had a 1.9% increase in yield but a 22.6% increase in seed weight
- 1.0% GG had a 26% increase in yield and a 18.8% increase in weight
- Not statically significant but very good trends

# Understanding BHN Products and Not Just the Analysis

- Breakout and Golden Gro: neither product has this use on their labels
- Understanding the total impact of the products allowed us some comfort in using them this way
- The more we understand, the more broad the use range



# Questions?

- Rudy Allen, CPAg/CCA-NW
  - Ag Tech Services, LLC
  - [agtech@comcast.net](mailto:agtech@comcast.net)
  - [www.agtechservicesllc.com](http://www.agtechservicesllc.com)
  - Blog: The Invisible Side of Ag at [www.agronomicallyspeaking.blogspot.com](http://www.agronomicallyspeaking.blogspot.com)