

# RETHINK TOMORROW

TagTeam Dry Bean Inoculant  
Overview

RETHINK  
TOMORROW



# TAGTEAM DRY BEAN INOCULANT

## WHAT IS IT?

- Multi-Action Biofertility Seed Inoculant
  - Produced by Novozymes BioAg, Inc. a world leader in biological innovation.
  - Contains *Rhizobium leguminosarum* bv. *Phaseoli* bacteria for nitrogen fixation
  - Contains fungus *Penicillium balaii* to aid phosphate availability
  - Peat formulation- applied directly to seed at planting
  - Effective on dry bean and snap/garden/string bean.
  - A supplemental addition to standard nitrogen fertility program.
  - Suggested grower price \$6.40 per cwt. seed



# EXAMPLE OF IMPROVED ROOT DEVELOPMENT



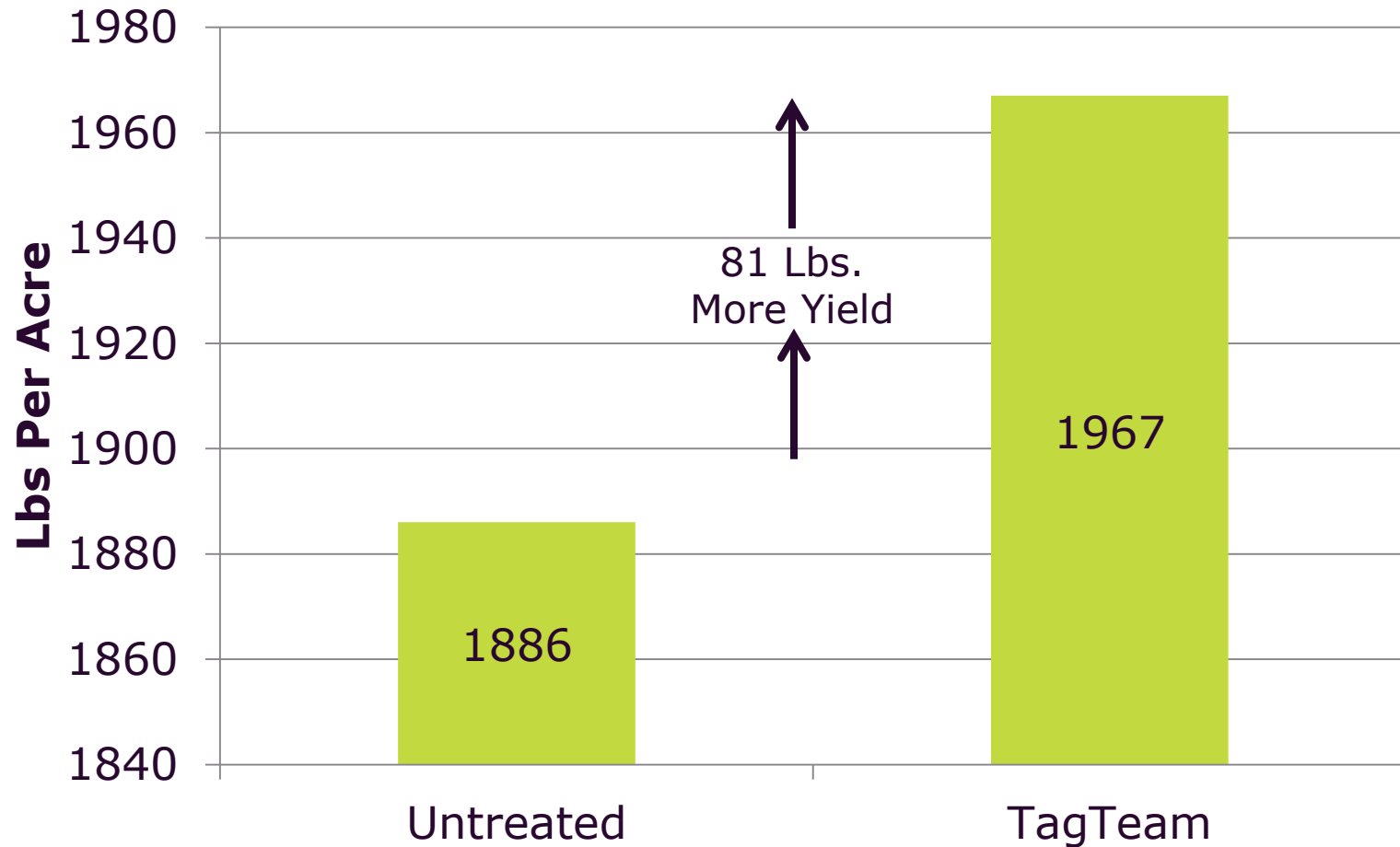


# GREAT NODULATION WITH TAGTEAM!



**TAGTEAM INOCULANT TESTS 2010  
MAGIC VALLEY IDAHO  
SEED COMPANY GROWER TRIAL**

**Field Yield**



10 Acre Plot Size Each Treatment  
pH 8.1, P 13 ppm (Olsen Test)

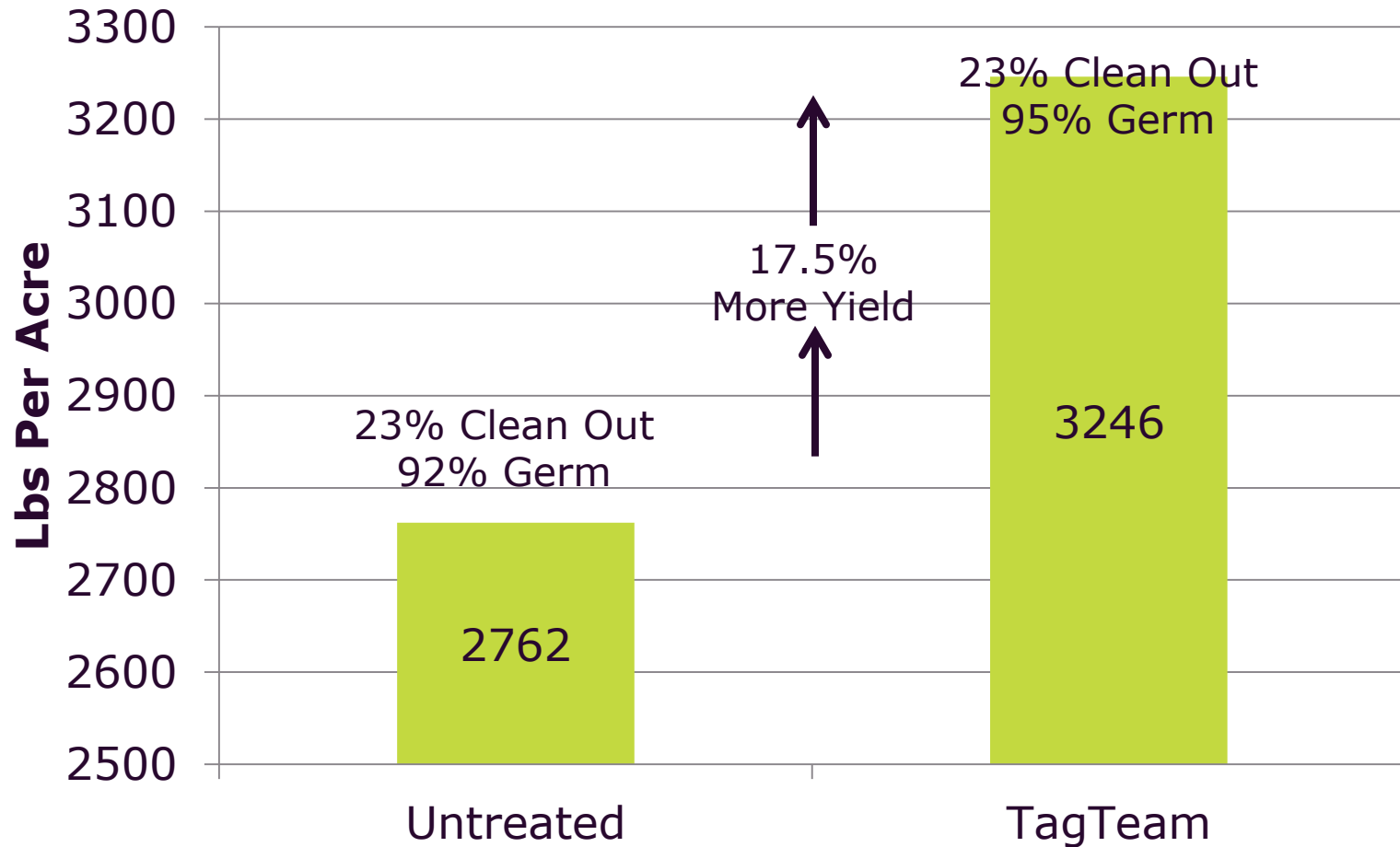
**Snap Bean Seed**

# TAGTEAM INOCULANT TESTS 2011

## TREASURE VALLEY IDAHO

### SEED COMPANY GROWER TRIAL

#### Field Yield



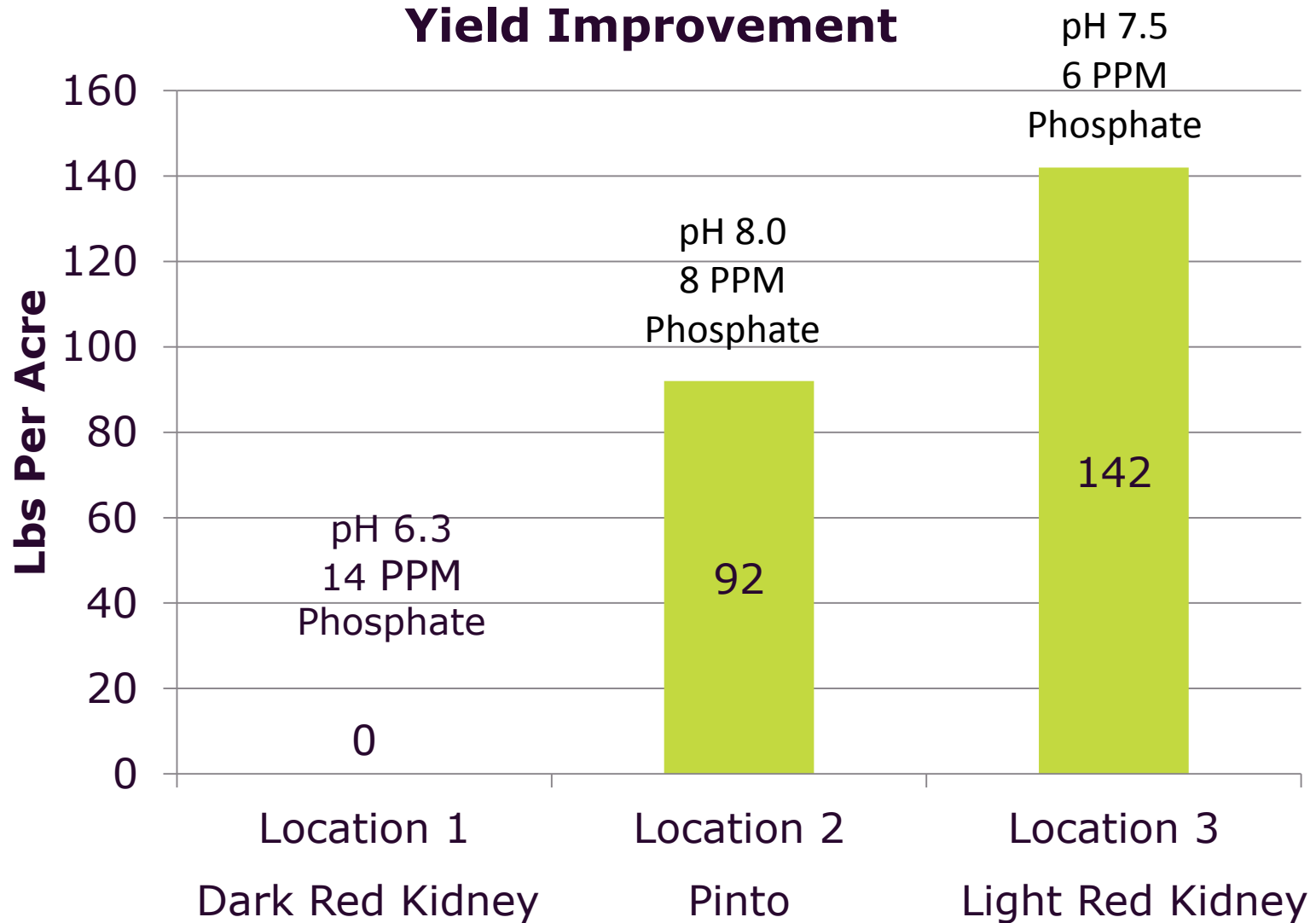
1.25 Acre Plot Size Each Treatment

Snap Bean Seed

# TAGTEAM INOCULANT TESTS 2012

## TREASURE VALLEY IDAHO

### SEED COMPANY GROWER TRIALS



No Measured Germination Difference In Treatments  
Soil Test P Measured With Sodium Bicarbonate Test



# IMPROVE GROWER PROFITABILITY TODAY





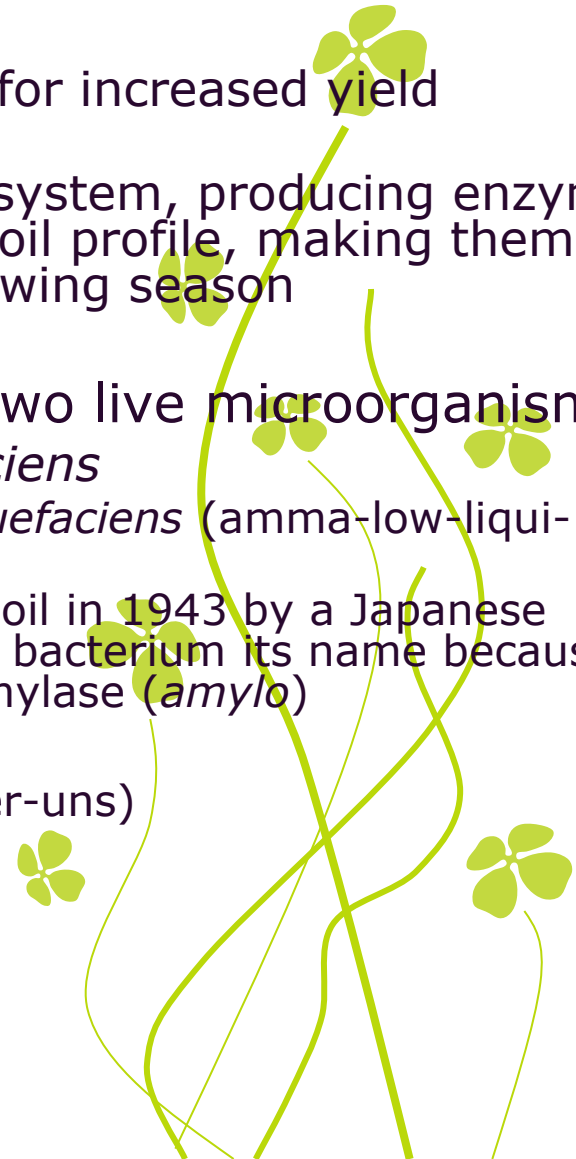
# QuickRoots®

Foundational, microbial seed inoculant  
for pulse crops

2014

# QUICKROOTS®

- What is it?
  - A foundational, microbial seed inoculant for increased yield composed of live microorganisms.
  - These microorganisms colonize the root system, producing enzymes that can release soil nutrients from the soil profile, making them available to the plant throughout the growing season
- The active ingredients are comprised of two live microorganisms:
  - Specific bacterium *Bacillus amyloliquefaciens*
    - *Bacillus* (bəsil'əs or ba-sill-us) *amyloliquefaciens* (amma-low-liqui-fashions)
    - *B. amyloliquefaciens* was discovered in soil in 1943 by a Japanese scientist named Fukumoto who gave the bacterium its name because it produced (*faciens*) a liquifying (*lique*) amylase (*amylo*)
  - Specific fungus *Trichoderma virens*
    - *Trichoderma* (trike-o-derma) *virens* (veer-uns)



# QUICKROOTS – BENEFITS

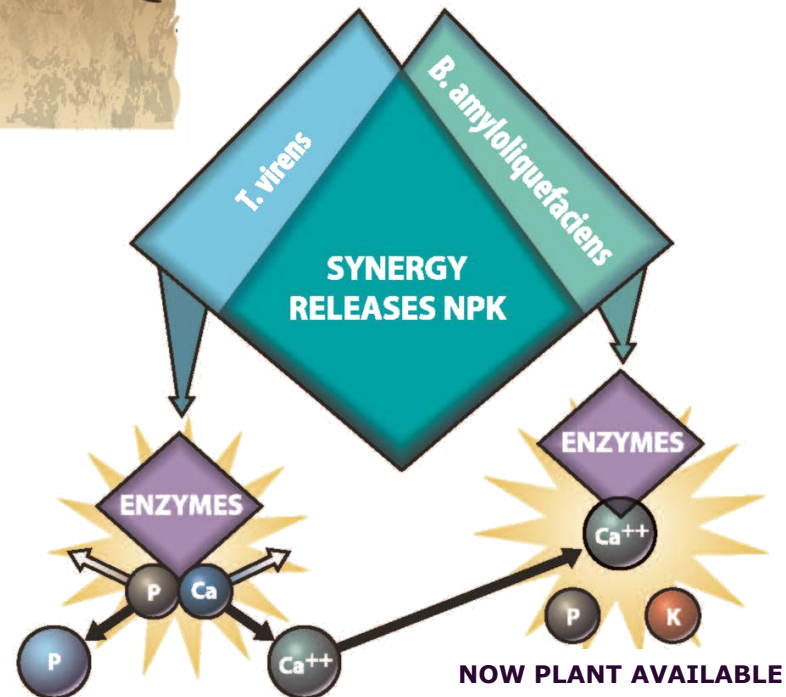
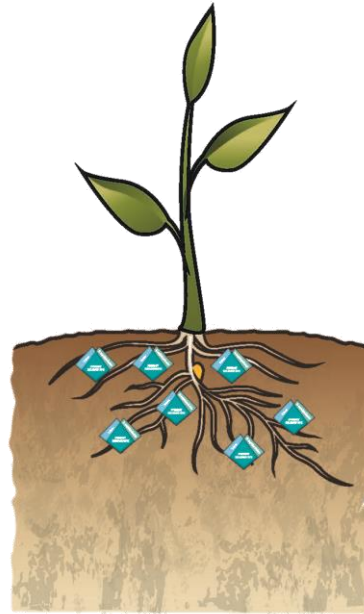
- Provides consistent, profitable yield responses
- Performs well in a variety of soil conditions and types
- Expands root volume and increases root hairs
- Improves nutrient uptake including NPK
- Enhances seedling vigor
- Accelerates plant growth
- Maximizes yield potential



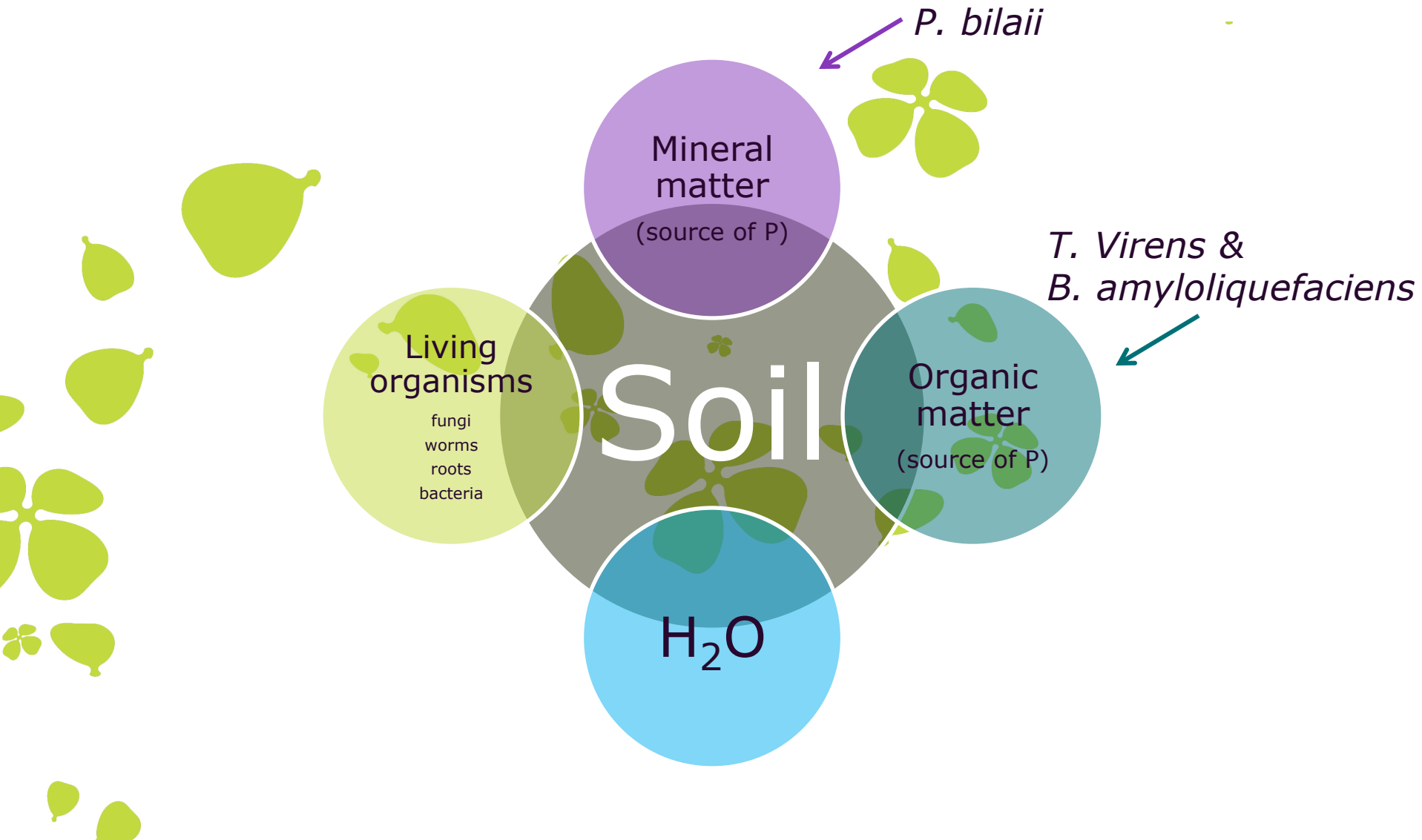
# TRICHODERMA VIRENS AND BACILLUS AMYLOLIQUEFACIENS

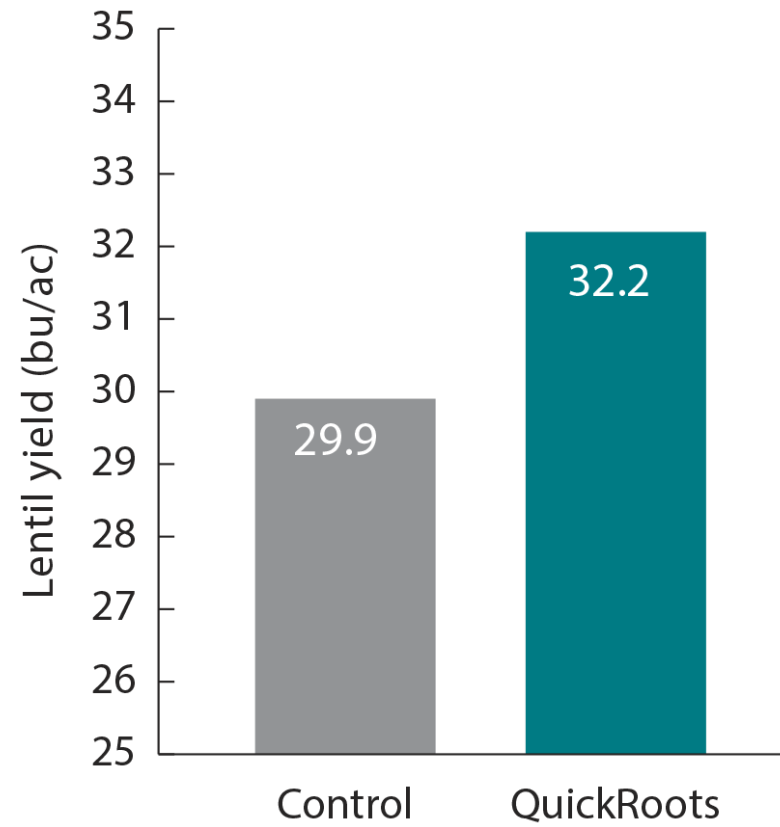
## HOW THEY WORK

1. Microorganisms colonize roots as they grow
2. *T. virens* produces enzymes that can break the bonds between Ca and P
3. *B. amyloliquefaciens* uses the Ca released by *T. virens* to stabilize the enzymes it releases
4. This stabilized enzyme releases plant available P from organic matter, also releasing K
5. Synergy between *T. virens* and *B. amyloliquefaciens* enables two-part reaction



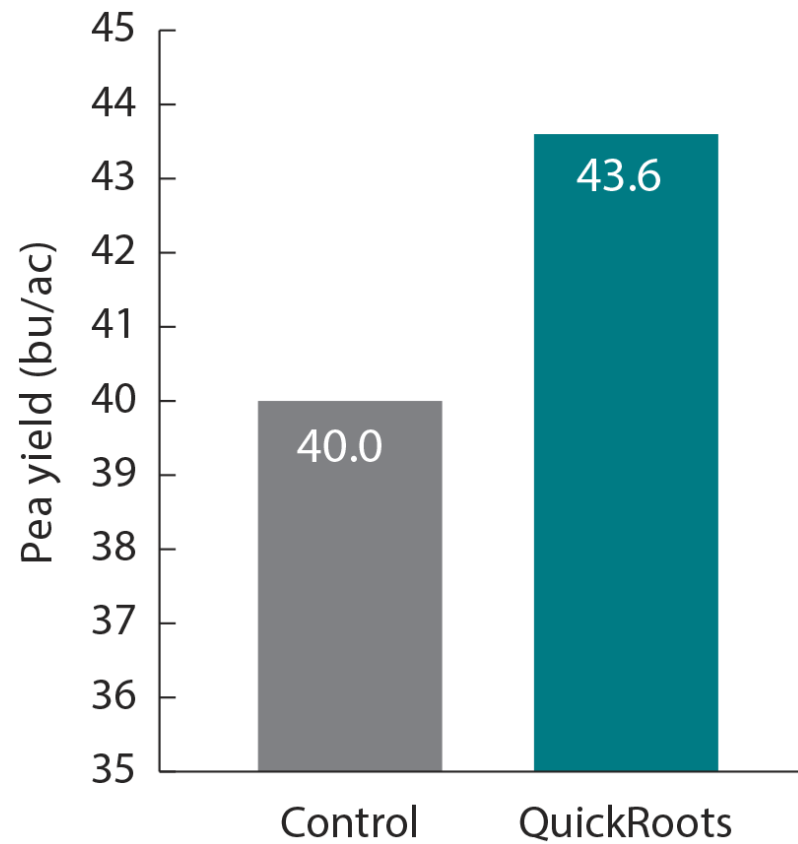
# HOW IS *PENICILLIUM BILAII* DIFFERENT FROM *TRICHODERMA VIRENS* AND *BACILLUS AMYLOLIQUEFACIENS*?





Replicated small plot trials  
(8 trials since 2010)





Replicated small plot trials  
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# QUICKROOTS FIELD PEA, LENTIL, CHICKPEA, DRY EDIBLE BEAN USE RATE AND PACKAGING

Wettable powder	
Packaging:	250 g (8.82 oz) spoutpak
Treats:	Field pea – 7,500 lbs Lentil – 2,750 lbs Chickpea – 5,830 lbs Dry bean – 3610 lbs
Use rate:	Field pea – 1 g (.035 oz)/60,000 Lentil – 1 g (.035 oz)/110,000 Chickpea – 1 g (.035 oz)/35,000 Dry bean – 1 g (.035 oz)/26,000
Time in tank:	2 hours
Time on seed:	18 months
Compatibility:	Refer to <a href="http://www.bioag.novozymes.com">www.bioag.novozymes.com</a> for up-to-date compatibility information
Always read and follow label directions	

*Thank's for your  
business!*

Questions?