



**LEAD THE WAY WITH AGTIV™**  
**BIOLOGICAL ACTIVE INGREDIENTS**  
MYCORRHIZAE & RHIZOBIUM INOCULANTS



# LEAD THE WAY



THE NEW **AGTIV™** AGRICULTURAL PRODUCT LINE AND ITS BIOLOGICAL ACTIVE INGREDIENTS HELP YOU LEAD THE WAY BY PROVIDING BIGGER YIELDS THROUGH STRONGER PLANT GROWTH AND BETTER PLANT RESISTANCE TO STRESSES AND DISEASES, ENSURING HEALTHIER CROPS AND A BRIGHTER FUTURE. WITH A UNIQUE OFFER OF BIOSTIMULANTS, **AGTIV™** DELIVERS ON ITS PROMISES FROM YOU TO YOUR CLIENTS!

## EASY TO USE

EACH **AGTIV™** PRODUCT IS TAILORED TO YOUR SPECIFIC FARMING PRACTICES.

## EFFECTIVE

**AGTIV™** DELIVERS STRONGER GROWTH, HIGHER YIELDS AND SUPERIOR CROP QUALITY YOU CAN COUNT ON.

## PROVEN RESULTS

BACKED BY 30 YEARS OF IN DEPTH EXPERTISE IN MYCORRHIZAE AND RHIZOBIUM, **AGTIV™** BUILDS ON THE SUCCESS OF OUR MYKE® PRO PRODUCT LINE, TRUSTED FOR MANY YEARS TO DELIVER SUSTAINABLE RESULTS IN THE FIELD.







# PULSES

Peas, lentils and faba beans



## MYCORRHIZAE & RHIZOBIUM



## HIGHER YIELDS THROUGH BETTER PHOSPHORUS UPTAKE

“Legumes associated with N-fixing rhizobia also require more P [...]. Tripartate associations of host plants with both rhizobia and mycorrhizae benefit the host plant because of increased P uptake from the mycorrhizal association balancing the high input of N through rhizobial N-fixation.”

Koele et al, VFRC Report 2014/1.

### AGTIV™ PULSES • Powder

Peat-based dual inoculant ideal for mixing with seeds at planting time.

#### ACTIVE INGREDIENTS:

##### ENDOMYCORRHIZAL INOCULUM

GHA297 (*Glomus intraradices*): 2 750 viable spores/g

##### RHIZOBIAL INOCULUM

GHA160 (*Rhizobium leguminosarum* biovar *viceae*):

1.6 x 10<sup>9</sup> viable cells/g

**SIZE:** 4.7 kg pail (10.3 lb) covers ▶ 16 ha (40 acres)

#### DIRECTIONS FOR USE

##### DRY APPLICATION

Mix evenly with seeds when filling seeder using grain auger or directly in the hopper or other container.

##### DAMP APPLICATION

Pre-moisten seeds with 300 ml of water/100 kg (3 fl. oz/bu) of seeds. Mix the damp seeds thoroughly with the product to ensure even coating.

##### SLURRY APPLICATION

Pour one 4.7 kg pail in a clean container. Gradually add 8-10 litres of clean, non-chlorinated water and stir well. Add more water if the slurry is too thick. Pour onto the seeds and mix thoroughly to ensure even coating.

It is recommended to seed within 4 hours after coating. Do not freeze or expose to temperatures above 25°C (77°F). Avoid severe temperature variations.

### AGTIV™ PULSES • Granular

Peat-based dual inoculant used for precise in-furrow application.

#### ACTIVE INGREDIENTS:

##### ENDOMYCORRHIZAL INOCULUM

GHA297 (*Glomus intraradices*): 142 viable spores/g

##### RHIZOBIAL INOCULUM

GHA160 (*Rhizobium leguminosarum* biovar *viceae*):

1 x 10<sup>9</sup> viable cells/g

**SIZE:** 18.2 kg bag (40 lb) covers ▶ 3.2 ha (8 acres)  
364 kg tote bag (800 lb) covers ▶ 64 ha (160 acres)

**PARTICLE SIZE:** 0.5 mm to 2 mm (10 - 30 mesh)

**BULK DENSITY:** 650 g/l (41 lb/ft<sup>3</sup>)

#### DIRECTIONS FOR USE

This product should be placed in the seed row. Apply at a rate of 5.7 kg/ha (5 lb/acre). Do not freeze or expose to temperatures above 20°C (68°F). Avoid severe temperature variations.



## PROVEN RESULTS

Since 2010, growers have increased their profitability with our inoculants.

Want to see the yield results? Visit our Crops section at [PTAGTIV.COM](http://PTAGTIV.COM)





# SOYBEAN



## MYCORRHIZAE & RHIZOBIUM



## IMPROVED NITROGEN FIXATION FOR INCREASED CROP PRODUCTIVITY

“Studies have clearly demonstrated that when legumes symbiose with both rhizobia and AM-fungi [Arbuscular Mycorrhizal Fungi], **plant growth, yield, and nitrogen nutrition are generally much greater** than plants inoculated either with rhizobia or AM fungi alone.”

M.S. Khan et al. (eds.), Microbes for Legume Improvement, DOI 10.1007/978-3-211-99753-6\_17, # Springer-Verlag/Wien 2010

### AGTIV™ SOYBEAN • Powder

Peat-based dual inoculant ideal for mixing with seeds at planting time.

#### ACTIVE INGREDIENTS:

##### ENDOMYCORRHIZAL INOCULUM

GHA297 (*Glomus intraradices*): 2 750 viable spores/g

##### RHIZOBIAL INOCULUM

GHA162 (*Bradyrhizobium japonicum*): 2.5 x 10<sup>9</sup> viable cells/g

**SIZE:** 4.7 kg pail (10.3 lb) **COVERS** ▶ 16 ha (40 acres)

#### DIRECTIONS FOR USE

Mix evenly with seeds at the bottom of the grain auger while filling drill, or directly in the drill box. Ensure proper seed coverage is obtained. Apply at 300 g/ha (120 g/acre). It is recommended to seed within 4 hours after coating. Do not freeze or expose to temperatures above 25°C (77°F). Avoid severe temperature variations.

### AGTIV™ SOYBEAN • Granular

Peat-based dual inoculant used for precise in-furrow application.

#### ACTIVE INGREDIENTS:

##### ENDOMYCORRHIZAL INOCULUM

GHA297 (*Glomus intraradices*): 142 viable spores/g

##### RHIZOBIAL INOCULUM

GHA162 (*Bradyrhizobium japonicum*): 1.5 x 10<sup>8</sup> viable cells/g

**SIZE:** 18.2 kg bag (40 lb) **COVERS** ▶ 3.2 ha (8 acres)  
364 kg tote bag (800 lb) **COVERS** ▶ 64 ha (160 acres)

**PARTICLE SIZE:** 0.5 mm to 2 mm (10 - 30 mesh)

**BULK DENSITY:** 650 g/l (41 lb/ft<sup>3</sup>)

#### DIRECTIONS FOR USE

This product should be placed in the seed row. Apply at a rate of 5.7 kg/ha (5 lb/acre). Do not freeze or expose to temperatures above 20°C (68°F). Avoid severe temperature variations.



## EFFECTIVE

Eager to see how these products can make a difference in the field? Visit our Crops section at [PTAGTIV.COM](http://PTAGTIV.COM)





# WHY THE DUAL TECHNOLOGY WORKS

## RHIZOBIUM

GHA160, GHA162

Allows the formation of nodules on the roots

## MYCORRHIZAE

GHA297

Develop an intra and extra-radical network of filaments that will explore the soil



1 Formulation



2 Application



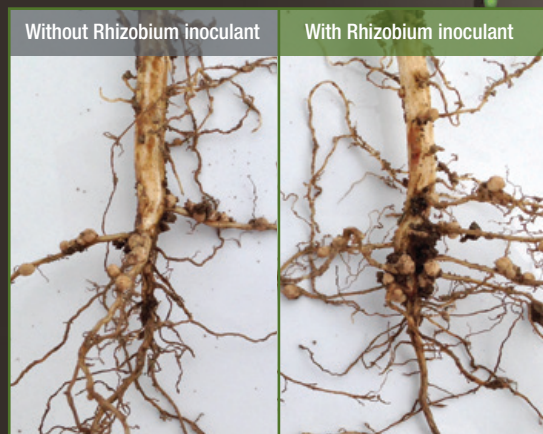
3 Root-Hair Recognition



4 Nodulation Process



5 Nitrogen Fixation



Without Rhizobium inoculant

With Rhizobium inoculant

LEGEND

- RHIZOBIUM
- NODULE
- SPORE
- ARBUSCULE
- VESICLE
- ATMOSPHERIC NITROGEN (N<sub>2</sub>)
- FIXED NITROGEN (N)
- PHOSPHORUS (P)
- POTASSIUM (K)
- H<sub>2</sub>O

FIXES NITROGEN AND MAKES IT AVAILABLE TO THE PLANT



ENHANCE NUTRIENT AND WATER UPTAKE



INCREASE TOLERANCE TO STRESSES



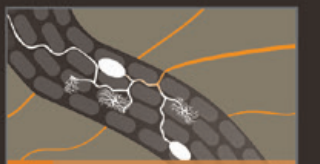
EXPAND ROOT SYSTEM GROWTH



IMPROVE SOIL STRUCTURE



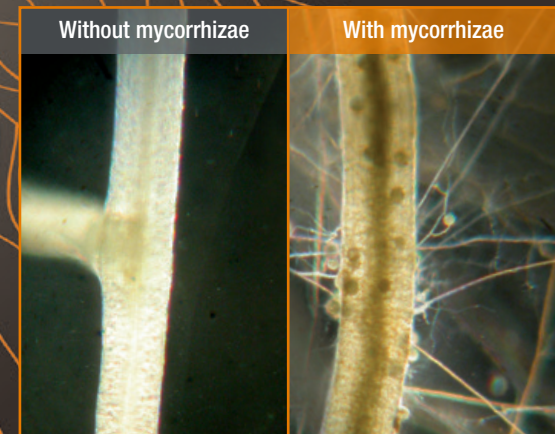
3 Germination & Exploration



4 Colonization



5 Water & Nutrient Absorption



Without mycorrhizae

With mycorrhizae





# FIELD CROPS



MYCORRHIZAE



## BIGGER NUTRIENT ABSORPTION AREA USING THE MYCORRHIZAL NETWORK

“The P depletion zone around a non-mycorrhizal roots extends to only 1–2 mm, nearly the length of a root hair whereas **extraradical hyphae of AMF** [Arbuscular Mycorrhizal Fungi] **extends 8 cm or more beyond the root** making the P in this greater volume of soil available to the host.”

M.S. Khan et al. (eds.), Microbes for Legume Improvement, DOI 10.1007/978-3-211-99753-6\_17, # Springer-Verlag/Wien 2010

### AGTIV™ FIELD CROPS • Powder

Clay-based endomycorrhizal inoculant ideal for mixing with seeds at planting time.

#### ACTIVE INGREDIENT:

ENDOMYCORRHIZAL INOCULUM  
GHA297 (*Glomus intraradices*): 3 200 viable spores/g

SIZE: 4 kg pail (8.8 lb) **COVERS ▶** 16 ha (40 acres)

#### DIRECTIONS FOR USE

Mix evenly with seeds at the bottom of the grain auger while filling drill, or directly in the drill box. Ensure proper seed coverage is obtained. Apply at 250 g/ha (100 g/acre). It is recommended to seed within 8 hours after coating. Do not freeze or expose to temperatures above 35°C (95°F). Avoid severe temperature variations.

### AGTIV™ FIELD CROPS • Granular

Endomycorrhizal inoculant on fine granules used for precise in-furrow application.

#### ACTIVE INGREDIENT:

ENDOMYCORRHIZAL INOCULUM  
GHA297 (*Glomus intraradices*): 142 viable spores/g

SIZE: 18.2 kg bag (40 lb) **COVERS ▶** 3.2 ha (8 acres)  
364 kg tote bag (800 lb) **COVERS ▶** 64 ha (160 acres)

PARTICLE SIZE: 0.4 mm to 1.4 mm (14 - 40 mesh)  
BULK DENSITY: 920 g/l (57 lb/ft<sup>3</sup>)

#### DIRECTIONS FOR USE

This product should be placed in the seed row. Apply at a rate of 5.7 kg/ha (5 lb/acre). Do not freeze or expose to temperatures above 35°C (95°F). Avoid severe temperature variations.



### LEAD THE WAY

with our highly effective product line. Want to know more?

For yield results and product information, applications and compatibilities, refer to the label or visit [PTAGTIV.COM](http://PTAGTIV.COM)





# FIELD CROPS



MYCORRHIZAE



## BETTER PLANT RESISTANCE TO STRESSES FOR SUPERIOR CROP AND GRAIN QUALITY

“AMF [Arbuscular Mycorrhizal Fungi] beneficial effects include host plants' **increased resistance to biotic** (pathogens) **and abiotic stress** (drought, salinity, heavy metals) **and increased soil quality** by enhancing soil aggregation and improving structure.”

Elisa Pellegrino et al., Responses of wheat to arbuscular mycorrhizal fungi: A meta-analysis of field studies from 1975 to 2013, Soil Biology & Biochemistry 84 (2015) 2010-2017

### AGTIV™ FIELD CROPS • Liquid

Endomycorrhizal inoculant used for precise in-furrow application.

#### ACTIVE INGREDIENT:

ENDOMYCORRHIZAL INOCULUM, GHA297 (*Glomus intraradices*): 6 400 viable spores/ml

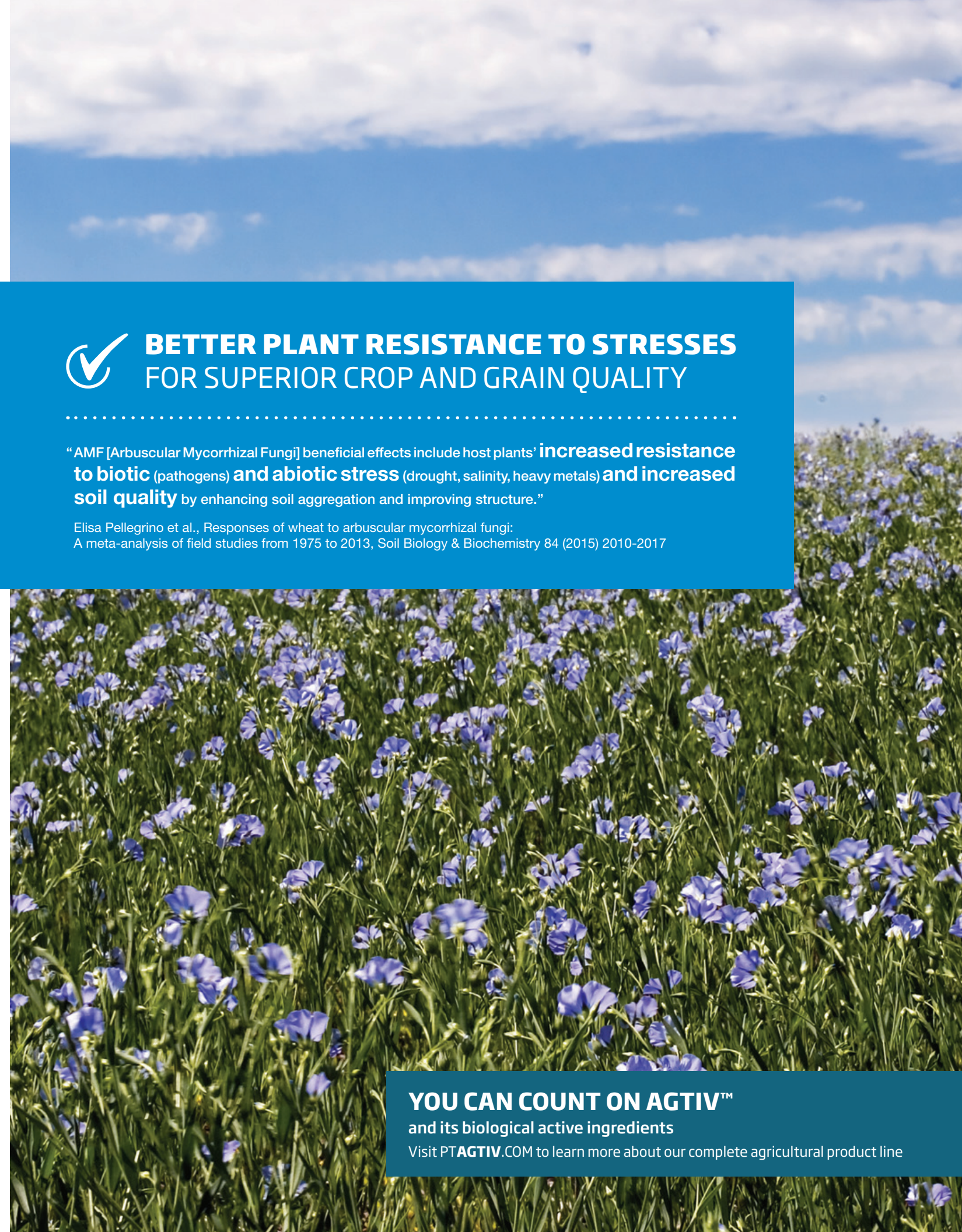
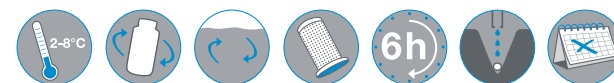
SIZE: Case = 2 x 950 ml bottles (2 x 32 fl. oz) 1 case COVERS ▶ 16 ha (40 acres)

#### DIRECTIONS FOR USE

In the liquid tank, pour the contents of one 950 ml bottle in the volume of liquid required to treat 8 hectares (20 acres). Refer to the application chart on the label or visit [PTAGTIV.COM](http://PTAGTIV.COM). Only apply directly **in furrow**. Follow the 7 rules for success.

#### ▶ 7 RULES FOR SUCCESS

Product must be refrigerated (2-8°C, 36-46°F). Avoid severe temperature variations. Shake well before use and maintain under constant agitation during application. Use filters with openings of at least 0.28 mm (50 mesh) and use within 6 hours after mixing. The product must be applied directly on the seed. Do not use after the best before date indicated on the label.



**YOU CAN COUNT ON AGTIV™**

and its biological active ingredients

Visit [PTAGTIV.COM](http://PTAGTIV.COM) to learn more about our complete agricultural product line





# POTATO



MYCORRHIZAE



## INCREASED MARKETABLE YIELDS AND HOMOGENEITY

“Analysis of a large dataset of mycorrhiza inoculation field trials on potato shows highly significant increases in yield.”

Mohamed Hijri, Mycorrhiza, DOI 10.1007/s00572-015-0661-4

### AGTIV™ POTATO • Liquid

Endomycorrhizal inoculant specifically developed for seed-piece treatment and in-furrow application.

#### ACTIVE INGREDIENT:

ENDOMYCORRHIZAL INOCULUM, GHA297 (*Glomus intraradices*): 10 500 viable spores/ml

SIZE: Case = 2 x 950 ml bottles (2 x 32 fl. oz) 1 case COVERS ▶ 8 ha (20 acres)

#### DIRECTIONS FOR USE

##### IN-FURROW APPLICATION AT PLANTING

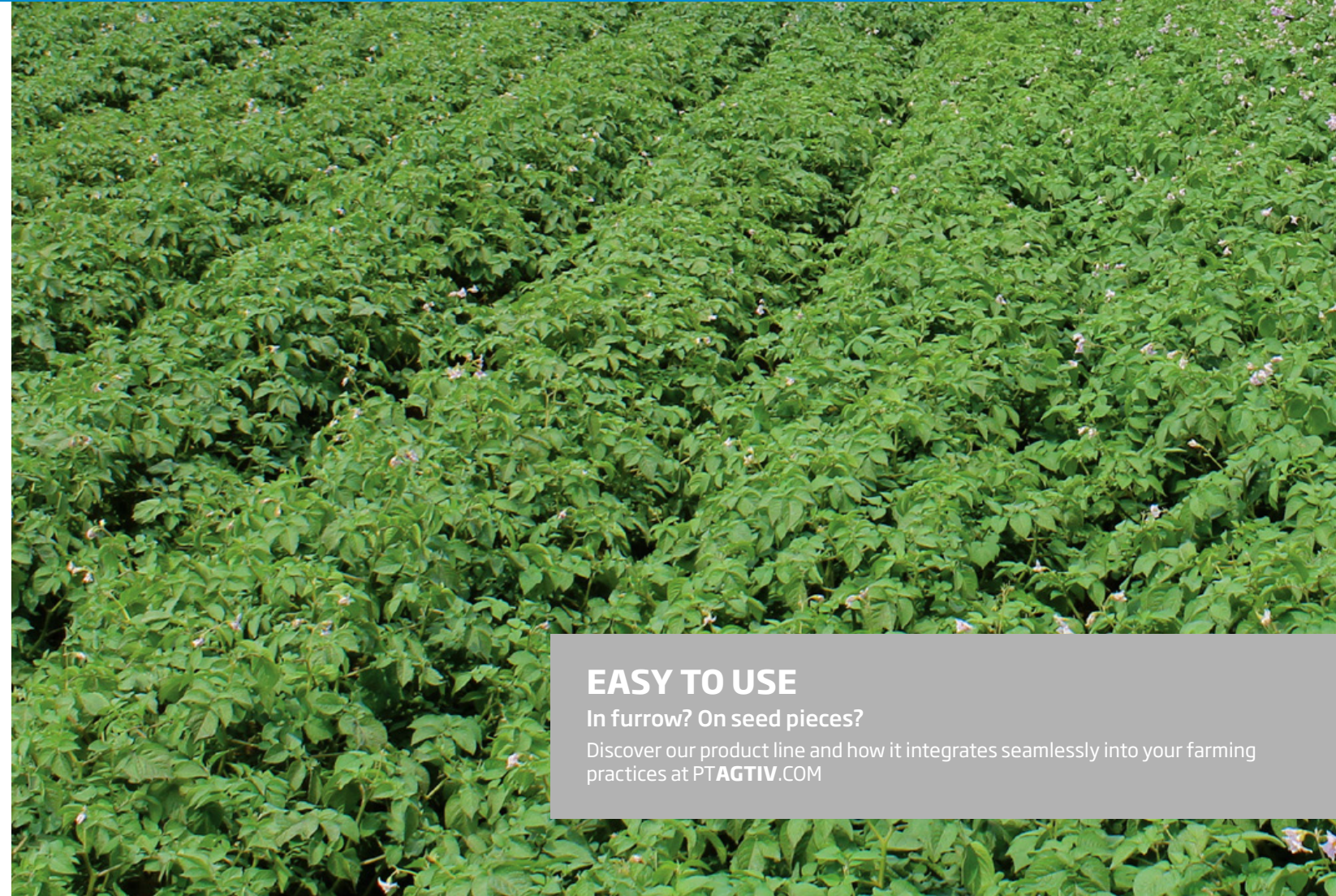
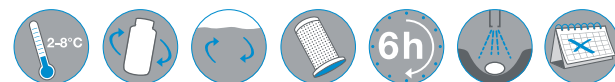
Directly in the liquid tank, pour the contents of one 950 ml bottle in the volume of liquid required to treat 4 hectares (10 acres). Refer to the application chart on the label or visit [PTAGTIV.COM](http://PTAGTIV.COM). Apply directly on seed pieces into furrow. Follow the 7 rules for success.

##### SEED-PIECE TREATMENT AT THE WAREHOUSE

In a clean tank, pour the contents of one 950 ml bottle in the volume of liquid required to treat the amount of seed pieces for 4 hectares (10 acres) of seedbed (110 000 – 170 000 seed pieces). Apply directly on seed pieces (see website for dilution calculations when used in combination with another product). Do not inoculate seed pieces more than 48 hours before seeding. Follow the 7 rules for success.

##### ▶ 7 RULES FOR SUCCESS

Product must be refrigerated (2-8°C, 36-46°F). Avoid severe temperature variations. Shake well before use and maintain under constant agitation during application. Use filters with openings of at least 0.28 mm (50 mesh) and use within 6 hours after mixing. Band width should be limited to 7 in (18 cm) or less. Do not use after the best before date indicated on the label.



### EASY TO USE

In furrow? On seed pieces?

Discover our product line and how it integrates seamlessly into your farming practices at [PTAGTIV.COM](http://PTAGTIV.COM)



# WE ARE PASSIONATE ABOUT AGRICULTURE

THE RISING WORLDWIDE DEMAND FOR FOOD REQUIRES THAT WE FIND WAYS TO INCREASE CROP PRODUCTIVITY WHILE PROTECTING THE ENVIRONMENT. THIS REALITY – COMBINED WITH OUR SCIENTIFIC AND TECHNICAL EXPERTISE IN THE PRODUCTION AND USE OF ACTIVE INGREDIENTS, WHICH IN TURN IS SUPPORTED BY ONGOING INVESTMENTS IN OUR MANUFACTURING CAPABILITY – IS WHAT LED PREMIER TECH TO CREATE THE **AGTIV™** COMMERCIAL OFFER FOR BOTH FIELD CROPS AND SPECIALTY CROPS INTERNATIONALLY. **THE FUTURE OF SUSTAINABLE AGRICULTURE IS NOW AND THIS IS YOUR TIME!**

## WE BRING OUR EXPERTISE FROM OUR TEAMS TO YOUR FIELDS



1, avenue Premier, Campus Premier Tech, Rivière-du-Loup (Québec) G5R 6C1 CANADA



1 866 454-5867 • [info@ptagtiv.com](mailto:info@ptagtiv.com)



[PTAGTIV.COM](http://PTAGTIV.COM)

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