



# Application Guide for Growers



**bioensure**<sup>®</sup>  
Formula 22  
Fungal Inoculant

**biotango**<sup>™</sup>  
Bacterial Inoculant



ADAPTIVE  
SYMBIOTIC  
TECHNOLOGIES



**BRIDGE**  
ENVIRONMENTAL

**Symbiotic microbes for  
increased stress tolerance  
& higher crop yields.**



Liquid crop treatment that imparts  
abiotic stress tolerance to plants.



**BioEnsure® Benefits**

- Beneficial symbionts give crops a natural ability to tolerate abiotic stresses and increase nutrient use efficiency for higher yields.
  - Crops gain increased tolerance to extreme temperatures, drought, and poor growing conditions, including salty and sodic soils.
- May be compatible with existing seed treating equipment and chemicals.\*
- Non-toxic, easy to use liquid formulation.
- Sourced, manufactured and certified in the U.S.A.
- Shelf-life of liquid when stored @ 4-10°C is 1 year.



**Application**

- Can be used for on-seed, in-furrow and foliar applications.
- **BioEnsure®** is a living organism. Mixing with other seed treatments must be done in separate tanks to reduce product mortality. Use solution within **4 hours** of mixing.
- **Working synergistically for better results** -- **BioEnsure®** and **BioTango™** are formulated to be applied together. For detailed application instructions see **page 3** for all treatment types.

**Handling & Storage**

- Keep material from prolonged exposure to sunlight and from elevated temperatures >25°C.
- Best if stored in closed containers at refrigeration (4-10°C) until applied.

**Guaranteed Analysis**

Active Ingredient:	
<i>Trichoderma harzianum</i> (>1x10 <sup>6</sup> spores/ml) . . . .	0.50%
Inert Ingredient:	
Sterile Water (H <sub>2</sub> O) . . . . .	99.50%
Total . . . . .	100.00%

\* Contact us for an approved list of compatible seed treating chemicals.



# biotango™

Bacterial Inoculant

Powdered crop treatment that enhances the availability of nutrients through crop root systems.

## BioTango® Benefits

- Beneficial bacteria that solubilize bound soil minerals and nutrients.
  - Enhances crop production by freeing up necessary plant elements.
- Microbes remain inactive until soil moisture levels are sufficient to stimulate seed germination. Once activated they remain in rhizosphere soils.
- May be compatible with existing seed treating equipment and chemicals.\*
- Non-toxic, easy to use soluble powder formulation.
- Sourced, manufactured and certified in the U.S.A.
- Shelf-life of powder stored below 25°C is 2 years.



The microbes in BioEnsure® & BioTango™ are non-hazardous, non-toxic and non-pathogenic.

## Application

- Can be used for on-seed, in-furrow and foliar applications.
- BioTango™ is a living organism. Mixing with other seed treatments must be done in separate tanks to reduce product mortality. Use solution within 4 hours of mixing.
- Working synergistically for better results -- BioEnsure® and BioTango™ are formulated to be applied together. For detailed application instructions see page 3 for all treatment types.

## Handling & Storage

- Keep material from prolonged exposure to sunlight and from elevated temperatures >25°C.
- Best if stored in closed containers at refrigeration (4-10°C) until applied.

### Guaranteed Analysis

Active Ingredient:	
<i>Bacillus licheniformis</i>	(>1x10 <sup>8</sup> cfu/g) ... 2.00%
<i>Bacillus megaterium</i>	(>1x10 <sup>8</sup> cfu/g) ... 2.00%
<i>Bacillus pumilus</i>	(>1x10 <sup>8</sup> cfu/g) ... 2.00%
<i>Bacillus subtilis</i>	(>1x10 <sup>8</sup> cfu/g) ... 2.00%
<i>Bacillus amyloliquefaciens</i>	(>1x10 <sup>8</sup> cfu/g) ... 2.00%
Inert Ingredient:	
Sucrose Powder	90.00%
<b>Total</b>	<b>100.00%</b>



**biotango**<sup>TM</sup>  
Bacterial Inoculant

+

**bioensure**<sup>®</sup> Formula 22  
Fungal Inoculant

### In Field Treatment Instructions

**BioEnsure**<sup>®</sup> + **BioTango**<sup>TM</sup> are formulated to be used together when treating. This dynamic duo can be used for on-seed, in-furrow or foliar spray applications following the instructions below. See **Application Rate Table** for product volumes.

#### On Seed Treatment

For optimal seed coverage dilute **BioEnsure**<sup>®</sup> in rainwater or low mineral ground water\* and then add in **BioTango**<sup>TM</sup> powder. Mix until homogeneous. Solution should be put directly onto dry seed within 4 hours.

\* Do not use town water as it may contain biocidal chlorine or fluorine.

#### In-furrow and foliar treatment

Shake well and mix **BioEnsure**<sup>®</sup> with the volume of rainwater or low mineral ground water\* used for in-furrow or foliar fertilizer. Stir well, then add **BioTango**<sup>TM</sup> into **BioEnsure**<sup>®</sup> solution and mix until dissolved. **In-Furrow** - Apply solution directly onto seeds during planting. **Foliar Spray** - Apply directly onto plant tissue during vegetative or reproductive growth stages. **Solution must be used within 4 hours.**

### Application Rate Table:

Crop	On-Seed	Foliar	In-Furrow
Pasture & Turf	BioEnsure - 8 ml/Ha	BioEnsure - 8 ml/Ha	BioEnsure - 8 ml/Ha
	BioTango - 1 g/Ha	BioTango - 1 g/Ha	BioTango - 1 g/Ha

[Rates based on **BioEnsure - Formula 22** concentration]



A package agricultural treatment that imparts the power of *beneficial symbiosis* to crops.

### Application Notes

- Product mortality will occur if **BioEnsure® + BioTango™** package is mixed in same tank as other chemicals. Product can only be applied with other seed treatments (insecticides, herbicides, biocides) when **done from separate tanks.**
- Do not use with soil fumigants.
- **BioEnsure® + BioTango™** solution must be used within **4 hours** of mixing material.
- Close and refrigerate any unused material. Contents of original packages must be used within 24 hours after opening.
- Proven results with cotton, corn, sorghum, rice, soy, lucerne, sugarcane, pulses, canola, wheat, barley, oats, vegetable crops, turf, pasture grass, trees & ornamentals.

### Handling & Disposal

The microbes in BioEnsure & BioTango are not harmful to humans. However, in the rare instance of an allergic reaction, we recommend gloves, eye protection and mask be used when handling material. Wash hands with soap and water after using. Do not swallow, avoid contact with eyes and open skin. Keep out of reach of children and pets. Follow any local applicable waste disposal regulations for inoculants and plant amendments. Wash hands with soap and water after disposal.

### Warranty Statement

The seller warrants that these products contain a minimum number of viable beneficial microorganisms as indicated on this label. The seller makes no other warranty expressed or implied as to product viability or performance since storage, use and growing conditions are beyond the seller's control.

### Guaranteed By

Adaptive Symbiotic Technologies  
3503 NE 45th Street, Suite 2W  
Seattle, WA 98105, U.S.A.  
[www.adsymtech.com](http://www.adsymtech.com)





# Material Safety Data Sheet



Section	Category	BioEnsure Details	BioTango Details
1	Processed & packed by	Adaptive Symbiotic Technologies 3503 45th Ave NE, STE 2w Seattle, WA, USA 98105	
2	Mfg License No.		
3	Composition	Fungal spores & Water	Bacteria & Sucrose powder
4	First Aid Measures	<p><b>Eyes:</b> Mildly irritating to eyes.</p> <p><b>Skin:</b> Mildly irritating to skin. Frequent and prolonged contact may cause dermatitis. No effect should occur, if promptly washed off.</p> <p><b>Inhalation:</b> If present as high concentration of air borne dust prolonged contact may cause irritation to nose and throat, May cause coughing and shortness of breath.</p> <p><b>Ingestion:</b> May cause diarrhea, Nausea, Vomiting and cramps, weakness and circulatory problem.</p>	
5	Measures & fighting against fire	Fire extinguishing media: CO <sub>2</sub> , Dry Chemicals	
6	Measures in case of leak or unforeseen release	<ol style="list-style-type: none"> <li>1. Remove persons not wearing protective clothing from spill area.</li> <li>2. Ventilate spill area.</li> <li>3. Absorb on to clay, absorbent material.</li> <li>4. Decontaminate with 10% bleach solution for 20 minutes.</li> </ol>	
7	Storage & Handling	<p>Handling: Wear safety goggles when diluting.</p> <p>Storage: Store in a well-ventilated place away from food, direct sunlight and high temperatures. Do not freeze.</p> <p>Keep container closed when not in use.</p>	
8	Exposure Control & Personal Protection	Not applicable	
9	Physical & Chemical Properties	<p>Nature: Green Solution</p> <p>Odour: Characteristic odour</p> <p>Solubility in Water: Sparingly soluble</p> <p>Boiling Point: Not applicable</p> <p>Melting Point: Not applicable</p>	<p>Nature: White powder</p> <p>Odour: Characteristic odour</p> <p>Solubility in Water: Partially soluble</p> <p>Boiling Point: Not applicable</p> <p>Melting point: Not applicable</p>
10	Stability & Reactivity	Not applicable	Stable under ordinary conditions of use and storage
11	Toxicological Information	Non-Toxic and Non-Pathogenic	
12	Ecological Information	Waste Disposal Method: Dispose of in accordance with all federal, state and local standards.	



**biotango**™  
Bacterial Inoculant

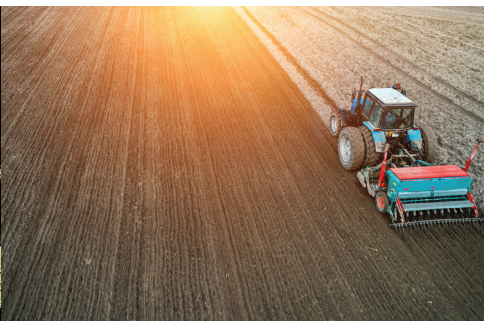
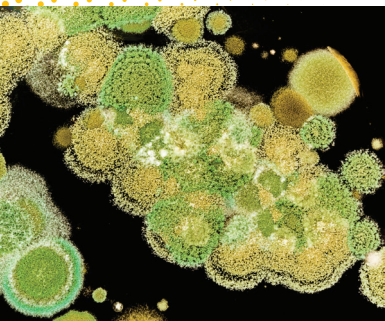


**bioensure**®  
Fungal Inoculant

(Continued)

Section	Category	BioEnsure Details	BioTango Details
13	Elimination Considerations	Not Applicable	
14	Transport Information	Shipping Name: BioEnsure Shipping containers Marking: BioEnsure Shipping Containers Labels: BioEnsure Flammability: Not Flammable	Shipping Name: BioTango Shipping containers Marking: BioTango Shipping Containers Labels: BioTango Flammability: Can burn in fire
15	Regulations Information	Designation: Eco-friendly Origin: Non-Hazardous Material	
16	Protection Information	Chemical safety goggles. Use protective clothing, gloves and mask. Safety shower and Eye bath. Avoid contact with eyes. Wash thoroughly after handling. Keep Tightly closed. Store in a cool dry place.	
17	Emergency & First Aid Procedure	In case of Contact, immediately flush eyes, or skin with copious amount of water for at least 15 min while removing contaminated clothing and shoes. If inhaled, move to fresh air, If not breathing give artificial respiration. If breathing is difficult give oxygen. If swallowed, Wash mouth with water, provided person is conscious.	
18	Handling & Storage Conditions	Normal House Keeping Procedures	
19	Spill or Leak Procedures Special	Not Applicable	
20	Use	Agriculture purpose	

Specification			
SI No	Parameters	BioEnsure Content	BioTango Content
1	Form and appearance	Green color liquid solution	White Powder
2	pH	7.0 to 8.0	
3	CFU's on selective medium	Greater than or equal to 10 <sup>8</sup> colony per milliliter	Greater than or equal to 10 <sup>6</sup> colony per gram
4	Other microbial contaminants	Not exceeding 0.01% or 100ppm	Not exceeding 0.1% or 1000ppm
5	Stability of CFU's at 4-10° C and 65 % RH	1 year	2 years



NON-Toxic



NATURAL



NO Genetic  
Modification



MADE IN U.S.A.



Scan for Online  
Applications



ADAPTIVE  
SYMBIOTIC  
TECHNOLOGIES

**Adaptive Symbiotic Technologies**

**Customer Service:** 1-206-617-1489

**E-mail:** [info@adsymtech.com](mailto:info@adsymtech.com)

**Website:** [www.adsymtech.com](http://www.adsymtech.com)



**BRIDGE  
ENVIRONMENTAL**

**Bridge Environmental Pty Ltd**

**Customer Service:** 1300-849-280

**Call or Text:** 0422-367-680

**E-mail:** [bill@bridge-environmental.com](mailto:bill@bridge-environmental.com)

**Website:** <https://bridge-environmental.com>

*"Remarkable things can be achieved through cooperation."*

*-- Dr. Rusty Rodriguez, CEO AST*