

# Vault<sup>®</sup> HP

## Growth Enhancement System

This seed treatment product is intended to help maximize root nodulation and nitrogen fixation of soybean plants.

### CONTAINS NONPLANT FOOD INGREDIENTS

#### Soil Amendment Guaranteed Analysis

<i>Bradyrhizobium japonicum</i> .....	1 x 10 <sup>10</sup> Colony forming units per mL
Sucrose (Microbial feed).....	32%

### FOR PROFESSIONAL USE ONLY

Keep Out of Reach of Children

This product does not require a hazard warning in accordance with GHS criteria.

### Contents for Treating: 2 x 200 Treated Unit Size

Total package contents treat 20,000 pounds (9,072 kilograms) of soybean seed.

Guaranteed by:  
BASF Corporation  
26 Davis Drive, Research Triangle Park, NC 27709

This entire case contains enough **Vault® HP Growth Enhancement System Plus Integral® Liquid Biofungicide** to treat a total of 20,000 lbs of soybean seed\*.

(This package contains two (2) complete sets of **Vault HP Growth Enhancement System Plus Integral**. Each individual set will treat 10,000 lbs of seed\* which is equivalent of 200 50-lbs units. All two sets combined will treat a total of 20,000 lbs of soybean seed or 400 50-lb units.)

\*At an average of 3,000 seeds per pound.

#### **NET CONTENTS:**

**Vault HP Growth Enhancement System** consists of:

- **(Component A) – Liquid Rhizobial Inoculant** – a brownish liquid packaged in two (2) 100 fluid ounce (3 liter) bladders
- **(Component B) – Liquid Growth Enhancer** – a yellow/gold liquid packaged in two (2) 86.4 fluid ounce (2.6 liter) bladders

**NOTE:** The Liquid Growth Enhancer (Component B) may appear separated. This is normal and will easily return to a uniform consistency when shaken or mixed.

#### **This box also contains:**

- **Integral Liquid Biofungicide** – packaged in two (2) 13.6 fluid ounce (402 milliliter) bottles

#### **Directions For Use**

*SHAKE ALL COMPONENTS WELL BEFORE USE.*

Seed treated with the **Vault HP Growth Enhancement System Plus Integral Liquid Biofungicide** mixture must be used with an EPA-approved dye or colorant that imparts an unnatural color to the seed. When the **Vault HP Growth Enhancement System** is combined with **Integral Liquid Biofungicide**, the resultant mixture may be applied either as a stand-alone seed treatment system or with other compatible seed treatment products as follows:

**For each 10,000 lbs of seed (equivalent to 200 50-lb seed units) use one complete set of components from the 2x200 package.**

In a clean mixing container or tank, thoroughly mix the complete contents of one (1) 100 fl oz bladder of Liquid *Rhizobial* Inoculant (Component A) with the complete contents of one (1) 86.4 fl oz bladder of Liquid Growth Enhancer (Component B) and the complete contents of one (1) 13.6 fl oz bottle of **Integral**. Continuous gentle agitation and aeration throughout the mixing and application process will enhance *rhizobia* survival in the mixture.

For maximum on-seed survival of *rhizobia*, mix and apply **Integral** and the components of **Vault HP Growth Enhancement System** in a tank separate from any other seed treatment products.

#### **When applied as a stand-alone treatment**

When the **Vault HP Growth Enhancement System** and **Integral** are to be applied without other seed treatment(s), **for each 10,000 lbs of treated seed (equivalent to 200 50-lb seed units)** thoroughly mix one complete set of **Vault HP Growth Enhancement System** components and **Integral** together with 300 fl oz (8,872 mL) of cool, clean, **non-chlorinated** water. Then apply the resulting mixture to soybean seed at the rate of 5.0 fl oz per 100 lbs of seed. **NOTE:** While you may apply the **Vault HP Growth Enhancement System** and **Integral** mixture at a rate of 2.0 fl oz/CWT without the addition of water, the *rhizobia* survival will be enhanced when the total volume of liquid applied to the seed is at least 5.0 fl oz per 100 lbs of seed. If mixing the entire contents of this case at one time (to treat 20,000 lbs of seed) use all two sets of components and increase the amount of non-chlorinated water to 600 fl oz (17,774 mL) to achieve the appropriate volume to apply at 5.0 fl oz per 100 lbs of seed.

#### **When applied with additional seed treatments**

If applied with additional chemical seed treatment(s), the **Vault HP Growth Enhancement System Plus Integral Liquid Biofungicide** mixture may be applied at a 2.0 fl oz/CWT rate with **no additional water** as long as the total liquid volume being applied (**Vault HP** system plus all other seed treatment actives/polymers/colorants) is at least 5.0 fl oz per 100 lbs of seed. A wet sequential (also known as simultaneous) application method, using a separate application tank for the active chemicals/polymers/colorants, is recommended for enhanced on-seed survival. A common tank mix method, where the *rhizobia*-containing inoculant is mixed in the same tank as the active chemicals, will have a negative effect on *rhizobia* survival and is not recommended. Note that both the **Integral** and Liquid Growth Enhancer products are designed to work with the Liquid *Rhizobial* Inoculant. Furthermore, neither the Liquid Growth Enhancer nor the Liquid *Rhizobial* Inoculant affects the activity of **Integral**.

#### **Seed Treatment Compatibility**

Some seed treatment formulations can be harmful to the *rhizobia* in **Vault HP Growth Enhancement System**. Please consult your distributor, BASF representative, or the BASF website before applying this product with any other seed treatment product. Please observe the planting window recommendations of individual treatments for optimal product responses.

#### **Storage/Precautions**

**The Vault HP Growth Enhancement System contains multiple live organisms.**

**DO NOT ALLOW ANY OF THESE PACKAGED PRODUCTS TO FREEZE.**

Store the packaged **Vault® HP Growth Enhancement System Plus Integral® Liquid Biofungicide** product out of direct sunlight and between 40°-70°F (4°-25°C).

Store seed that has been treated with the **Vault HP Growth Enhancement System Plus Integral Liquid Biofungicide** mixture below 70°F (21°C) and away from direct sunlight. For more uniform temperature control, store packaged product and treated seed as close to floor level as possible.

Do not use **Vault HP Growth Enhancement System** that is past its expiration date or that has not been properly stored. Unless otherwise directed, do not mix **Vault HP Growth Enhancement System** with fertilizers or pesticides prior to application to seed.

**Product must be used (applied to seed) within 24 hours of being opened and mixed.**

### Guarantee

The Liquid *Rhizobial* Inoculant component of **Vault HP Growth Enhancement System** is guaranteed to contain  $1.0 \times 10^{10}$  *Bradyrhizobium japonicum* per milliliter until the expiration date when stored and handled properly.

### Attention!

Before using **Vault HP Growth Enhancement System**, please read all instructions carefully.

## Mixing Table Reference

### Vault HP Plus Integral 2 x 100 Treated Unit Size

Lbs of soybean seed to treat	<b>Vault HP Rhizobial Inoculant</b> (fl oz)	<b>Vault HP Growth Enhancer</b> (fl oz)	<b>Integral Liquid Biofungicide</b> (fl oz)	Cool, non-chlorinated water (fl oz)
10,000 lbs	100 (one bladder)	86.4 (one bladder)	13.6 (one bottle)	0* (When applying with additional seed treatments)
10,000 lbs	100 (one bladder)	86.4 (one bladder)	13.6 (one bottle)	300** (With <b>Vault HP</b> only – no other treatments)
20,000 lbs	200 (two bladders)	172.8 (two bladders)	27.2 (two bottles)	0* (When applying with additional seed treatments)
20,000 lbs	200 (two bladders)	172.8 (two bladders)	27.2 (two bottles)	600** (With <b>Vault HP</b> only – no other treatments)

\* When total liquid volume of all treatments being applied to the seed is equal to, or greater than, 5.0 fl oz per 100 lbs of seed, do not add any water to the **Vault HP** mixture.

\*\* When applying **Vault HP Plus Integral** without additional seed treatments, it is recommended to add non-chlorinated water to attain a total liquid application rate of 5.0 fl oz per 100 lbs of seed.

**Open contents of the Vault HP Growth Enhancement System and Integral Liquid Biofungicide only when ready to use.**

- Shake all containers well before opening.
- Any opened but unused materials must be discarded at the end of each day.

Always apply all components of the **Vault HP Growth Enhancement System** and **Integral** together in seed treatment mixture. Applying only individual components or products separately will not provide the desired results.

The total contents of this **Vault HP Growth Enhancement System** are intended to treat 20,000 lbs of soybean seed when applied according to these **Directions For Use**.

### State Right To Know Description and CAS # / TSNR

Dipotassium phosphonate / 13492-26-7; Paraffin oils / 8012-95-1; Trehalose / 99-20-7; Carbohydrate / NJTS 29943300001-9919; Proprietary compound / TSNR 161090809-5100

**EMERGENCY CONTACT: CHEMTREC 1-800-424-9300  
BASF Corporation 1-800-832-HELP (4357)**

This product is not recommended as a fertilizer substitute. Information regarding the contents and levels of metals in this product is available on the Internet at:  
<http://www.aapfco.org/metals.html>.

## Conditions of Sale and Warranty

The **Directions For Use** of this product reflect the opinion of experts based on field use and tests. The directions are believed to be reliable and must be followed carefully. However, it is impossible to eliminate all risks inherently associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or use of the product in a manner inconsistent with its labeling, all of which are beyond the control of BASF CORPORATION ("BASF") or the Seller. To the extent consistent with applicable law, all such risks shall be assumed by the Buyer. BASF warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes referred to in the **Directions For Use**, subject to the inherent risks, referred to above. **TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, BASF MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF FITNESS OR MERCHANTABILITY OR ANY OTHER EXPRESS OR IMPLIED WARRANTY. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, BUYER'S EXCLUSIVE REMEDY AND BASF'S EXCLUSIVE LIABILITY, WHETHER IN CONTRACT, TORT, NEGLIGENCE, STRICT LIABILITY, OR OTHERWISE, SHALL BE LIMITED TO REPAYMENT OF THE PURCHASE PRICE OF THE PRODUCT. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, BASF AND THE SELLER DISCLAIM ANY LIABILITY FOR CONSEQUENTIAL, EXEMPLARY, SPECIAL OR INDIRECT DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT.** BASF and the Seller offer this product, and the Buyer and User accept it, subject to the foregoing **Conditions of Sale and Warranty** which may be varied only by agreement in writing signed by a duly authorized representative of BASF

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Materials in the Vault HP *rhizobial* inoculant and liquid growth enhancer are covered under U.S. Patent # 7,262,151 and other pending patents. The purchase of these materials conveys no license under said patents other than to utilize the materials for the purpose for which they are sold.

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Research Triangle Park, NC 27709



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