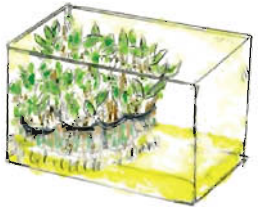
Hortus

Plant Propagation from Cuttings

A Guide to Using Plant Rooting Hormones by Foliar and Basal Methods

Special Edition

This book includes the label for Hortus IBA Water Soluble Salts®



Hortus USA Corp.

Propagation of plants from cuttings is the most popular way to produce cloned copies of the stock plant. Natural substances from the leaves of plants stimulate root formation. Some cuttings are can produce roots with their own substances. Most cuttings require additional stimulation. In the 1930's the natural root forming substance and its bio- simulators were identified, they are called 'rooting hormones'. The most used rooting hormone, IBA, is the active ingredient in Hortus IBA Water Soluble Salts and Rhizopon AA products.

This book gives essential information on stock plant preparation, selection and timing of taking cuttings, rooting hormone products and five methods of application. All are important to produce successful new roots and superior new plants

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Hortus IBA Water Soluble Salts & Rhizopon AA
are products of

Hortus USA Corp.

support@hortus.com
rooting-hormones.com
Mobile Device Website: m.hortus.com

Hortus IBA Water Soluble Salts and Rhizopon AA Plant Rooting Products are available from your favorite horticultural suppliers.

For distributor purchasing and distributor referral
contact master distributor:

Phytotronics 314-770-0717 sales@phytotronics.com

Products Used to Make Rooting Solutions

Hortus IBA Water Soluble Salts and Rhizopon AA Water Soluble Tablets are used to make fresh Rooting Solutions. Mix in ordinary water. Use by Basal and all Foliar Methods.

Hortus IBA Water Soluble Salts® (20%)

- Active Ingredient: Indole-3-butyric acid (IBA) 20%
- Measure Hortus IBA Water Soluble Salts using a scale then mix into ordinary water.
- Hortus IBA Water Soluble Salts are water soluble to over 100,000 *ppm* IBA, remain in solution at any concentration, and are buffered close to neutral.

- For foliar methods, Hortus IBA Water Soluble Salts Rooting Solutions are specially formulated to allow entry through open stomata into the plant's vascular system.
- **Hortus IBA Water Soluble Salts are used by any method and rate where technical IBA and K-IBA and pre-mix rooting products are used.**

Rhizopon® AA Water Soluble Tablets

- Active Ingredient: Indole-3-butyric acid (IBA) 20%
- Count Rhizopon AA Water Soluble Tablets then mix into ordinary water.
- Rhizopon AA Water Soluble Tablets are water soluble to 1000 *ppm* IBA.
- Rhizopon AA Water Soluble Tablets are useful when a scale is not available to measure and to mix small amounts of Rooting Solution or low rates.

Products Used by the Basal Dry Dip Method

Rhizopon AA #1, #2 and #3 Dry Dip Rooting Hormones are always ready to use. Use by the Basal Dry Dip Method.

Rhizopon® AA #1 (0.1)

- Active Ingredient 0.1% Indole-3-butyric acid (IBA)
- **Color identified Pink Color Powder.**
- Use on easy to root cuttings.

Rhizopon® AA #2 (0.3)

- Active Ingredient 0.3% Indole-3-butyric acid (IBA)
- **Color identified Green Color Powder.**
- An intermediate all purpose product.
- Use on easy to more difficult to root cuttings.

Rhizopon® AA #3 (0.8)

- Active Ingredient 0.8% Indole-3-butyric acid (IBA)
- **Color identified White Color Powder.**
- Use on more difficult to root cuttings.

Foliar Methods

Use Hortus IBA Water Soluble Salts and Rhizopon AA Water Soluble Tablets to Make Rooting Solutions

SPRAY DRIP DOWN METHOD

- Stick cuttings.
- Spray the Rooting Solution onto leaves until drip down.

TOTAL IMMERSE METHOD

- Total immerse the cuttings a few seconds in the Rooting Solution.
- Drain.
- Stick cuttings.

Basal Methods

BASAL QUICK DIP METHOD

- Immerse basal end of cuttings a few seconds in the Rooting Solution.
- Stick cuttings.

BASAL LONG SOAK METHOD

- Immerse basal end of cuttings a few hours in the Rooting Solution.
- Stick cuttings.

Use Rhizopon AA #1, #2 and #3 Dry Dip Rooting Hormones

DRY DIP METHOD

- Dip basal end of cuttings in the Rhizopon AA rooting powder.
- Stick cuttings.

Questions you want to ask before reading this book

? About the Products

How much Hortus IBA Water Soluble Salts do I need?

- **To make a Rooting Solution, for one gallon at1000 *ppm* you need 19 grams of Hortus IBA Water Soluble Salts.**
- By the **Basal Long Soak** and **Basal Quick Dip Methods** one gallon of Rooting Solution can treat many thousand cuttings.
- By the **Spray Drip Down Method** one gallon of Rooting Solution can treat 175-225 square feet of propagation trays.
- **Annual cuttings** require 100 *ppm* or less. You need 1.9 grams of Hortus IBA Water Soluble Salts per gallon.

Can I make a concentrated stock mix?

Rooting Solutions made with Hortus IBA Water Soluble Salts can be made to 100,000 *ppm* IBA using ordinary water. Growers can make up concentrated Rooting Solutions in the production office. The concentrated Rooting Solution can be added to the production tank in the work area then add water to bring the solution to full rate.

What is the keeping life of a Hortus IBA Water Soluble Salts Rooting Solution?

- **An un-used Rooting Solution can be used for several days after make-up if you store it at normal room temperature and light.** Solutions made for the Spray Drip Down Method **are un-used** until sprayed. *See page 16 for notes.*
- The **Total Immerse, Basal Long Soak** and **Basal Quick Dip Methods** use the Rooting Solution on each treated plant lot. Dispose **used** Rooting Solutions between production lots to avoid cross contamination.

What is the keeping life of dry Hortus IBA Water Soluble Salts, Rhizopon AA Water Soluble Tablets and un-used Rhizopon AA dry powder rooting hormones?

Un-used, dry, in the original container, sealed, and at room temperature, the products will retain close to their full potency for many years. Refrigeration is not required. Do allow them to become damp or wet. *See page 16 for notes.*

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What is the cost of Hortus IBA Water Soluble Salts compared with so called 'pre-mix' rooting products? How is Hortus IBA Water Soluble Salts different from a pre-mix?

- **Hortus IBA Water Soluble Salts cost about 1/3 to 1/5 the price of *'pre-mix'* rooting solutions.**
- A gallon of Hortus IBA Water Soluble Salts Rooting Solution, at 100 *ppm* IBA, costs about 65¢; a gallon at 10,000 ppm IBA cost about $65. *(The same 'premix' IBA rate costs over $210!)*
- Hortus IBA Water Soluble Salts can be shipped by ordinary means. *'Pre-mix'* rooting solutions can incur 'hazardous shipping charges'.
- Hortus IBA Water Soluble Salts Rooting Solutions are made by the grower using ordinary water; the Rooting Solutions can never cause solvent toxicity. Alcohol based *'pre-mix'* rooting solutions may cause alcohol toxicity to the cuttings especially at high concentrations.

What is the difference between Hortus IBA Water Soluble Salts or Rhizopon AA Water Soluble Tablets and technical IBA/KIBA?

- Hortus IBA Water Soluble Salts and Rhizopon AA Water Soluble Tablets are both registered by the US EPA for 'sale and use' by plant growers. Technical IBA/K-IBA are not US EPA registered for use by plant growers.

Hortus IBA Water Soluble Salts and Rhizopon AA Water Soluble Tablets replace technical IBA/K-IBA for use in plant growing!

- Hortus IBA Water Soluble Salts and Rhizopon AA Water Soluble Tablets are soluble in ordinary water. Technical IBA is only soluble in active solvents that can cause plant fatality and 'burns'.
- Hortus IBA Water Soluble Salts can be dissolved in water to over 100,000 *ppm* IBA and Rhizopon AA Water Soluble Tablets to 1000 *ppm* IBA; they will remain in solution indefinitely. Technical K-IKA can only be dissolved in water to about 10,000 *ppm* IBA and drops out of solution.
- Hortus IBA Water Soluble Salts and Rhizopon AA Water Soluble Tablets have US EPA labels for foliar and basal methods. They are specially formulated for these methods.

What is the WPS re-entry interval (REI) for Hortus IBA Water Soluble Salts and Rhizopon AA products?

Hortus IBA Water Soluble Salts and all Rhizopon AA products have US EPA labels with ZERO hour REI.

How do I select Hortus IBA Water Soluble Salts or Rhizopon AA Water Soluble Tablets?

Both products are used in both foliar and basal methods.

- **Hortus IBA Water Soluble Salts:**
  - Soluble in water to over 100,000 *ppm* IBA.
  - Measured using a scale.
  - Cost effective for commercial growers.
- **Rhizopon AA Water Soluble Tablets:**
  - Soluble in water to 1000 *ppm* IBA.
  - Measured by counting tablets. Counting is useful where a scale is not available.
  - Useful when growers require low concentrations or small liquid volumes.
  - Economical for small commercial users or consumer users.

About the Rooting Solution Methods

Why would I want to use 'Foliar' compared to 'Basal' Rooting Solution methods?

Foliar methods are used on leafy plants in the growing season. Basal methods are used all year. Foliar methods treat cuttings uniformly. Basal Quick Dip Method may have variable treatment. Foliar methods use less labor then Quick Dip.

When can I turn on misters after treating by the Spray Drip Down Method?

Growers usually wait 30-45 minutes or until the Rooting Solution dries on the leaves.

Do I need special equipment to do foliar methods?

Most growers use standard spray equipment such as backpack sprayers, hydraulic sprayers, or hand sprayers. Boom sprayers can be used, but, they might require too much trouble to set up for one time use. Production greenhouses and nurseries where spray is done regularly have made custom spray carts to meet needs.

About the Dry Dip Rooting Hormones & Comparison with Rooting Solutions

How many cuttings can be treated using Rhizopon AA dry powders?

One pound of Rhizopon AA dry powder rooting hormones can treat about 30,000 cuttings.

Is there a difference in rooting between using 'Rooting Solutions' or 'dry powder rooting hormones'?

To be honest, makers who offer one type of product or another will say their product is the best. Growers always say some plants root better with Rooting Solutions or rooting powders. This is based upon the variety, time of the year, maturity of the cuttings and quality of the stock plants. In the US many growers prefer Rooting Solution methods. In Europe the growers prefer Dry Dip powder rooting hormones.

How are Rhizopon AA dry powder rooting hormones different from other brand dry powder rooting products?

Rhizopon AA #1, #2 and #3 are made with high loft talc resulting in uniform coverage of the treated cutting. The powders are color coded to identify the product: **Rhizopon AA#1 is pink**, **Rhizopon AA#2 is green** and **Rhizopon AA#3 is white**. Color coding helps the production workers to pick and use the proper product. All production lots are laboratory tested to assure they have uniform mix and meet the required concentration.

Why do I need to use rooting hormones when I propagate 'easy-to-root' cuttings?

The use of rooting hormones is NOT a waste of time; cuttings will rapidly produce high root mass and uniform roots!