



# LT BioSyn, Inc.

## RootGro™

**Reduces transplant shock and promotes new root growth**

**ACTIVE INGREDIENT:**

Indole-3-Butyric Acid .....0.8% w/w

**OTHER INGREDIENTS:** ..... 99.2% w/w

**TOTAL** 100.0% w/w

### KEEP OUT OF REACH OF CHILDREN

#### CAUTION

##### FIRST AID

**If on skin or clothing:**

- Take off contaminated clothing.
- Rinse skin immediately with plenty of water for 15-20 minutes.
- Call a poison control center or doctor for treatment advice.

##### HOTLINE

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. For general product information, call LT BioSyn, Inc. at (626)-930-9135 between the hours of 9 a.m. – 4 p.m. Pacific Time.

### PRECAUTIONARY STATEMENTS

#### ENVIRONMENTAL HAZARDS

Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment washwaters.

#### PERSONAL PROTECTIVE EQUIPMENT (PPE)

Applicators and other handlers must wear: Long sleeved shirt and long pants and shoes plus socks. Follow the manufacturer’s instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

EPA Reg. No. 72639-9  
EPA Est. No. 72639-CA-1

LT BioSyn, Inc.  
3406 POMONA BLVD  
POMONA, CA 91768  
USA

**Net Contents: As marked on container**

## USER SAFETY RECOMMENDATIONS

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

## DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during applications. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

## AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE), and restricted-entry interval. The requirements in this box only apply to uses that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 0 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water is:

- Long sleeved shirt and long pants
- Shoes plus socks

## INTRODUCTION

**Cuttings** from different varieties and species of plants, shrubs, and trees vary greatly in their capacity to form roots. Some root with ease and others with difficulty, or not at all. It is believed that natural root-forming hormones are present in different plants in varying quantities, and that the ease or difficulty with which a cutting can root is governed by the natural root-inducing hormones present.

The **dilution** of different strengths of **RootGro™**, which parallel the range of hormones in nature, is a development of striking importance. Different strengths are recommended for different plants, as can be seen in the plant name chart on the following pages.

### TYPE OF CUTTING TO USE:

Cuttings of current season's growth, 4 to 6 inches in length, generally are most satisfactory. Entire shoots of this length, cut at or near the base, should be taken, unless it is known that other plant parts root more readily. Some plants are readily propagated from leaf-bud cuttings. Propagators are familiar with the fact that tip cuttings of some varieties, and parts below the tip in other varieties, root best. This applies also, but to a lesser extent, to cuttings treated with

**RootGro™.** The basal cut may be made at a slant or straight with small pruning shears, or with a knife. Large leafed types of cuttings will need to be trimmed, but it is preferable to use the largest leaf area which can be kept in good condition, and at the same time meets the requirements for economy of space.

#### **TIME TO TAKE CUTTINGS:**

Cuttings of most deciduous shrubs usually root best when taken during June, July and August in the New York area. A few varieties can be taken the latter part of April, and others during May, depending upon when the new growth starts. Cuttings taken between August and December will vary considerably in their capacity to root, but a number of varieties will root well when taken at that time. Cuttings of certain plants are available over a much wider range of time in the South than in the North, and corresponding season advance must be considered. Cuttings of plants grown indoors are taken according to the condition of the material, without regard to season.

#### **CARE OF CUTTING MATERIAL:**

Cutting material should be kept fresh. Cuttings of many varieties keep fresh when the basal ends of stems are immersed in water or wrapped in wet cloth or burlap until ready to be placed in the **RootGro™** solution. Shoots and branches should not be kept in closed containers for long periods of time. Depending on humidity conditions, frequent spraying of the cuttings or covering with moist cheesecloth, will prevent excessive wilting.

#### **PLANTING CUTTINGS AND HOW TO CARE FOR THEM:**

After treatment with **RootGro™**, the cuttings should be planted in a mixture of ¼ peat moss and ¾ sand (by volume), or in sand only, until rooted. Propagators who have a satisfactory rooting medium should continue to use it. Any method of planting cuttings, which keeps them in good condition, may be used. When cuttings are planted in a vertical position, they require more critical care than when slanted in such a way that the exposed leaves lie flat or close to the surface of the rooting medium. Sufficient shade must be provided at all times, particularly on hot, bright days, to keep the cuttings fresh, but not dense enough to cause rotting of leaves, or mold growth. Immediately after planting, the cuttings should be watered thoroughly and regularly according to climatic conditions. The rooting medium below the surface must not be allowed to become dry.

A temperature in the bed of 70° to 75°F has proved satisfactory for many species. Temperatures below 60°F are not generally satisfactory with tested cuttings.

#### **APPLICATION INSTRUCTIONS**

Dip the basal end cuttings, individually or in bunches into the **diluted RootGro™ solution** for **3-5 seconds**.

Following dipping, place cuttings into planting medium. Depending on the species, rooting will take place in several weeks or months under a moist greenhouse environment. Transplanting may be performed once the cuttings have rooted.

#### **TO REDUCE TRANSPLANT SHOCK AND PROMOTE NEW ROOT GROWTH - for Shrubs, Flowers, Groundcovers & Houseplants**

Rose, Arborvitae, Gardenias, flowering trees and other ornamentals, bare root transplant or in containers, use 2 tablespoons of product per 10 gallons of water. Apply to root area in transplanting hole then cover roots with soil. After planting, repeat applications biweekly as a drench to thoroughly wet the root area using one teaspoon per 10 gallons of water.

**Annual and perennial flowers (bedding plants):** Use one tablespoon per 10 gallons of water and apply to thoroughly saturate root zone at time of planting. Repeat at weekly intervals until plants are well established.

**Groundcovers such as** Ivy, Iceplants, Geranium, Cotoneaster, Barberry, & Ajuga. Use 1 tablespoon per 10 gallons of water and apply thoroughly, saturating root zone area at time of planting. Repeat at weekly intervals until plants are well established.

**Houseplants (repotting and planting):** Use 1 tablespoon per 10 gallons of water and water thoroughly at weekly intervals to saturate root zone until plants are well established.

**Established plants:** To continue new root growth, use 1 tablespoon per 10 gallons of water and water plants once a month.

**TO REDUCE TRANSPLANT SHOCK AND PROMOTE NEW ROOT GROWTH –For various field crops; such as, brassica vegetables, leafy vegetables, cucurbit vegetables, fruiting vegetables, root & tuber vegetables, legume vegetables, citrus fruits, pome/stone fruits, vines, grapes and strawberries, alfalfa, cereal grains, turf grass, sod grass, and cotton.**

Mix **RootGro™** with the transplant water at the rate of 6-8 fl. oz. product per 100 gallons and apply at planting time. Make foliar application or side-drench at the same use rate two weeks after transplanting. 2-3 applications may be needed early in the growing season.

### CUTTINGS

**Dilution Rate:**

Cutting type	Dilution rate	Amount of product in amount of water
1. Softwoods or succulents	<b>1:20</b>	Mix 1 fl. oz. product in 20 fl. oz. water
2. Semi-hardwoods	<b>1:10</b>	Mix 1 fl. oz. product in 10 fl. oz. water
3. Hard woods	<b>1:5</b>	Mix 1 fl. oz. product in 5 fl. oz. water

**Mix only enough RootGro™ solution to be used immediately.** Photodegradation may occur; therefore, RootGro™ solution must be used within 10 hours of preparation.

**RootGro™** is recommended for use on **all nursery stock cuttings** including **Woody ornamentals, Deciduous hardwoods, Evergreens, Ground Covers, and Perennials**

The following plants have been successfully rooted with IBA supplement. Cuttings which respond to dilution **1 (1:20)** may be injured by use of dilution **3 (1:5)**, or in some cases, dilution **2 (1:10)**.

For plant types or species not found in the following list it is suggested Dilution **1 or 2** be used.

**The following plants have been successfully rooted with RootGro™**

<u>Common Name</u>	<u>Scientific Name</u>	<u>RootGro Dilution</u>
Acanthopanax	<i>Acanthopanax</i> sp.	3 ( <b>1:5 dilution</b> )
African Violet	<i>Saintpaulia</i> sp.	1 ( <b>1:20 dilution</b> )
Ageratum	<i>Ageratum</i> sp.	1
Andromeda	<i>Andromeda japonica</i>	1
Apple	<i>Malus</i> sp.	2 or 3
Arbor-Vitae(Thuja) vars.	<i>Thuja ellwangeriana aurea nana</i> <i>Thuja occidentalis</i> vars.	2 ( <b>1:10 dilution</b> ) 2 or 3
Arbutus (Trailing)	<i>Epigaea repens</i>	3
Ardisia	<i>Ardisia japonica</i>	2
Azalea vars.	<i>Azalea</i> spp.	2
Barberry	<i>Berberis</i> sp.	1
Bayberry	<i>Myrica</i> sp.	1
Beauty Berry	<i>Callicarpa</i> sp.	1
Beauty Bush	<i>Kiwitzia amabilis</i> (tips)(June-July)	3
Beech	<i>Fagus</i> sp. (August)	2

Begonia	<i>Begonia</i> sp.	1
Birch	<i>Betula</i> sp.	3
Bittersweet	<i>Celastrus</i> sp.	3
Blackberry	<i>Rubus</i> sp.	1
Bluebeard	<i>Caryopteris</i> sp.	1
Blueberry	<i>Vaccinium carymbosum</i> vars.	1 or 2
Bougainvillea	<i>Bougainvillea</i> sp.	1
Bowstring-Kemp (Snake plant)	<i>Sanseveria</i>	1
Boxwood	<i>Buxus</i> sp.	3
Broom	<i>Cystisus</i> sp.	1 or 2
Bush-Arbutus	<i>Albelia grandiflora rosea</i> (tips best)	1
Butterfly bush	<i>Buddleia</i> sp.	1
Camellia	<i>Camellia</i> sp.	3
Candytuft	<i>Iberis</i> sp.	1
Carnation	<i>Dianthus</i> vars.	1
Catalpa	<i>Catalpa</i> sp.	3
Chaste Tree	<i>Vitex</i> sp.	3
Chestnut	<i>Castanea</i> sp.	2
Chokeberry	<i>Aronia</i> sp.	2 or 3
Chrysanthemum	<i>Chrysanthemum</i>	1
Cinquefoil	<i>Potentilla</i> sp.	2
Clematis	<i>Clematis</i> sp.	2
Clerodendron	<i>Clerodendron</i> sp.	1
Clockvine	<i>Thunbergia</i> sp.	1
Coleus	<i>Coleus blumei</i>	1
Cotoneaster	<i>Cotoneaster horizontalis</i>	3
Crabapple	<i>Malus</i> sp.	2 or 3
Crape Myrtle	<i>Lagerstroemia indica</i>	1
Crassula	<i>Crassula rubicunda</i>	1
Creeper	<i>Parthenocissus</i> sp.	1
Croton	<i>Codiaeum</i> sp.	1
Cryptomeria	<i>Cryptomeria</i> sp.	3
Currant	<i>Ribes tenuiflorum</i>	1
Dahlia	<i>Dahlia</i> vars.	1
Daphne	<i>Daphne</i> sp.	1 or 2
Deutzia	<i>Deutzia magnifica</i>	1
Dewberry	<i>Rubus</i> sp.	1
Dianthus (see Carnation)		
Dogwood	<i>Cornus florida</i> (July)	3
Dovetree	<i>Davidia</i> sp.	1
Douglas fir	<i>Pseudotsuga</i> sp.	3
Dracena	<i>Dracena sanderiana</i>	1
Dutchmanspipe	<i>Aristolochia</i> sp.	1
Eider	<i>Sambucus</i> sp.	1 or 2
Elm	<i>Ulmus</i> sp. (June-July)	1
Escallonia	<i>Escallonia</i> sp.	3
Euonymus	<i>Euonymus</i> sp.	1
False arborvitae	<i>Thujaopsis</i> sp.	2
Fir	<i>Abies</i> sp.	3
Firethorn	<i>Pyracantha</i> sp.	1 or 2
Flowering Cherry vars.	<i>Prunus</i> sp. and vars.	1
Flowering quince	<i>Chaenomeles</i> sp.	3

Fontanesia	<i>Fontanesia</i> sp.	1
Forsythia	<i>Forsythia</i> sp.	1
Franklinia	<i>Gordonia alataamaha</i>	2
Fringe Tree	<i>Chionanthus</i> sp.	2
Fuchsia	<i>Fuchsia</i> spp.	1
Gardenia	<i>Gardenia florida</i>	1, 2 or 3
Geranium	<i>Geranium</i> spp.	1
Germander	<i>Teucrium</i> sp.	2 or 3
Golden chain	<i>Laburnum</i> spp.	2
Grape	<i>Vitis</i> sp. and vars.	3
Hawthorne	<i>Crateagus</i> sp.	3
Hazelnut	<i>Corylus</i> sp. (June)	1 or 2
Heath	<i>Erica carnea</i> vars.	3
Heather	<i>Calluna vulgaris</i> vars.	3
Hemlock vars	<i>Tsuga</i> sp. and vars. (Sept-June)	2 or 3
Hibiscus	<i>Hibiscus</i> (tropical)	2
Hibiscus (Rose of Sharon)	<i>Hibiscus syriacus</i> vars. (leafy and dormant)	3
Holly (American)	<i>Ilex opaca</i> , <i>Ilex pernyi</i>	3
Holly (Chinese)	<i>Ilex cornuta</i>	3
Holly (English)	<i>Ilex aquifolium</i>	3
Holly (Japanese)	<i>Ilex crenata</i> vars.	2
Honeysuckle	<i>Lonicera</i> sp.	1
Jasmine	<i>Jasminum nudiflorm</i>	1
Jetbead	<i>Rhodotypus</i> sp.	1
Juniper vars.	<i>Junuperus</i> spp.	3
Kerria	<i>Kerria</i> sp.	1
Knotwood	<i>Polygonum</i> sp.	3
Laburnocytisus	<i>Laburnocytisus</i> sp.	1 or 2
Lantana	<i>Lantana</i> sp.	1
Laurel	<i>Kalmia</i> sp.	3
Lavender	<i>Lavandula</i> sp.	1
Leucothoe	<i>Leucothoe</i> sp	2
Lilac (French-Hybrids)	<i>Syringa vulgaris</i> vars. (April15-May15)	3
Lily Scales	<i>Lilium</i> (Scales)	1 or 2
Linden	<i>Tilia</i> sp.	1
Locust	<i>Robinia</i> sp.	3
Magnolia	<i>Magnolia</i> sp.	2 or 3
Maidenhair Tree	<i>Ginko biloba</i>	2
Manzanita	<i>Arctostaphylos</i> sp.	3
Maple (Japanese)	<i>Acer japonicum palmatum</i> vars.	3
Matrimony Vine	<i>Lysium halimifolium</i>	3
Melastoma	<i>Melastoma</i> spp.	1
Mock Orange	<i>Philadelphus</i> sp.	1
Mulberry	<i>Morus alba</i>	1
Ninepark	<i>Physocarpus</i> sp.	3
Oak	<i>Quercus</i> sp.	3
Oleander	<i>Oleander nerium</i>	2
Olive	<i>Olea</i> sp.	3
Orange (sour)	<i>Citrus aurantium</i>	3

Orixa	<i>Orixa</i> sp.	1
Osage Orange	<i>Maclura</i> sp.	1
Osmanthus	<i>Osmanthus</i> sp.	2
Pachysandra	<i>Pachysandra terminalis</i>	2 or 3
Pea Shrub	<i>Caragana</i> sp.	1
Pear (stock)	<i>Pyrus serotina</i>	1
Pecan	<i>Pecan</i>	3
Penstemon	<i>Penstemon</i> sp.	1
Periwinkle	<i>Vinca</i> sp.	2
Petunia	<i>Petuniasp</i>	1
Philodendron	<i>Philodendron</i> sp.	1
Phlox	<i>Phlox</i> sp.	1
Photinia	<i>Photinia</i> sp.	1
Pine	<i>Pinus</i>	2 or 3
Poinsettia	<i>Euphorbia</i> vars.	1
Poplar	<i>Populus</i> sp.	1
Pricklypear Cactus	<i>Opuntia</i> sp.	1
Privet	<i>Ligustrum ovalifolium</i>	3
Raspberry	<i>Rubus</i> sp.	1
Retinospora vars.	<i>Chamaecyparis obtuse</i> vars.	3
	<i>Chamaecyparis ptsifera</i> vars.	3
Rhododendron vars.	<i>Rhododendron</i> spp.	3
Rose	<i>Rosa</i> vars.	1
Russian olive	<i>Elaeagnus</i> sp.	3
Sage	<i>Salvia</i> sp.	1
Sequoia (Giant)	<i>Sequoia giantia</i>	2
Silverbell	<i>Halesia</i> sp.	2
Snapdragon	<i>Antirrhinum</i> sp.	1
Snowbell	<i>Styrax</i> sp.	3
Snowberry	<i>Symphoricarpus</i> sp.	1
Sourwood	<i>Oxydendrum</i> sp.	3
Speedwell	<i>Veronica</i> sp.	1
Spirea	<i>Spirea</i> sp.	1
Springscent	<i>Fothergilla major</i>	2
Spruce(Blue)	<i>Picea pungens</i>	2
Spruce(Norway) vars.	<i>Picea excelsa</i> vars.(Nov-Feb)	1
Stevia	<i>Stevia</i> sp.	1
Stewartia	<i>Stewartia pentagyna</i>	1
St. Johnswort	<i>Hypericum</i> sp.	1
Sweetleaf	<i>Symplocos</i>	1
Taxus (see Yew)		
Trofoliate-Orange	<i>Poncirus</i> sp.	2
Trumpet creeper	<i>Campsis</i> sp.	1
Tuliptree	<i>Liriodendron</i> sp.	3
Umbrella Pine	<i>Sciadopitys verticillata</i>	3
Verbena	<i>Verbena</i> sp.	1
Viburnum	<i>Viburnum</i> sp.	1
Waxmyrtle	<i>Myrica</i> sp.	1
Weigelia	<i>Diervilla</i> sp.	1
Willow	<i>Salix</i> sp.	1

Wintergreen	<i>Gautheria</i> sp.	2
Wisteria	<i>Wisteria</i> sp.	2
Witch Hazel	<i>Hamamelis</i> sp.	2
Yellowwood	<i>Cladrastis</i> sp.	2
Yew	<i>Taxus</i> spp.	3
Zelkova	<i>Zelkova</i> sp.	2

### **STORAGE AND DISPOSAL**

Do not contaminate water, food or feed by storage or disposal.

**PESTICIDE STORAGE:**

RootGro™ should be stored in its original container in a cool, dry locked place out of the reach of children and out of direct sunlight.

**PESTICIDE DISPOSAL:**

Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

**CONTAINER DISPOSAL:**

Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

**For Residential Use:**

**DISPOSAL:**

**If empty:** Do not reuse this container. Place in trash or offer for recycling if available.

**If partly filled:** Your local government may forbid liquids and pesticides in their landfills. Call your local solid waste agency for disposal instructions. Never place unused product down any indoor or outdoor drain.

### **LIMITED WARRANTY AND DISCLAIMER**

**NOTICE:** LT BioSyn, Inc., 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. Buyer assumes all risks of use and handling which is a variance in any way with the directions herein. LT BioSyn, Inc., makes no other express or implied warranty of fitness or merchantability. In no case shall LT BioSyn, Inc., or the seller be liable for consequential, special or indirect damages resulting from the use or handling of this product. LT BioSyn, Inc., and Seller offer this product and the Buyer and user accept it, subject to the foregoing **Limited Warranty and Disclaimer** which may be varied only by agreement in writing signed by a duly authorized representative of LT BioSyn, Inc.

**RootGro™** is a trademark of LT BioSyn, Inc.

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