



U.S. ENVIRONMENTAL PROTECTION AGENCY  
 Office of Pesticide Programs  
 Biopesticides and Pollution Prevention Division (7511P)  
 1200 Pennsylvania Ave., N.W.  
 Washington, D.C. 20460

EPA Reg. Number:

90866-25

Date of Issuance:

11/15/2018

NOTICE OF PESTICIDE:

Registration  
 Reregistration  
 (under FIFRA, as amended)

Term of Issuance:

Unconditional

Name of Pesticide Product:

Persevere

Name and Address of Registrant (include ZIP Code):

CH Biotech R&D Co. Ltd.  
 601 Kettering Drive  
 Ontario, CA 91761

**Note:** Changes in labeling differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Biopesticides and Pollution Prevention Division prior to use of the label in commerce. In any correspondence on this product, always refer to the above EPA Registration Number.

On the basis of information furnished by the registrant, the above named pesticide is hereby registered under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA or the Act).

Registration is in no way to be construed as an endorsement or recommendation of this product by the U.S. Environmental Protection Agency (EPA). In order to protect health and the environment, the Administrator, on his or her motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under the Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others.

This product is unconditionally registered in accordance with FIFRA section 3(c)(5) provided that you:

1. Submit and/or cite all data required for registration or registration review of your product when the EPA requires all registrants of similar products to submit such data.
2. Submit storage stability and corrosion characteristics (Guidelines 830.6317 and 830.6320) data as these data requirements are not satisfied. A one-year study is required to satisfy these data requirements. You have 18 months from the date of this registration to provide these data to the EPA.

Signature of Approving Official:

Andrew Bryceland, Team Leader  
 Biochemical Pesticides Branch  
 Biopesticides and Pollution Prevention Division (7511P)  
 Office of Pesticide Programs

Date:

11/15/2018

3. Make the following labeling change before you release this product for shipment:
  - Revise the EPA Registration Number to read, "EPA Reg. No. 90866-25."
4. Submit one (1) copy of the final printed labeling for the record before you release this product for shipment.

Should you wish to add/retain a reference to your company's website on your label, then please be aware that the website becomes labeling under FIFRA and is subject to review by the EPA. If the website is false or misleading, the product will be considered to be misbranded and sale or distribution of the product is unlawful under FIFRA section 12(a)(1)(E). 40 CFR § 156.10(a)(5) lists examples of statements the EPA may consider false or misleading. In addition, regardless of whether a website is referenced on your product's label, claims made on the website may not substantially differ from those claims approved through the registration process. Therefore, should the EPA find or if it is brought to our attention that a website contains false or misleading statements or claims substantially differing from the EPA-approved registration, the website will be referred to the EPA's Office of Enforcement and Compliance Assurance.

Your release for shipment of this product constitutes acceptance of these terms. If these terms are not complied with, this registration will be subject to cancellation in accordance with FIFRA section 6. A stamped copy of the labeling is enclosed for your records. Please also note that the record for this product currently contains the following acceptable Confidential Statement of Formula (CSF):

- Basic CSF dated 04/16/2018

If you have any questions, please contact Cheryl Greene by phone at (703) 308-0352 or via email at [greene.cheryl@epa.gov](mailto:greene.cheryl@epa.gov).

Sincerely,



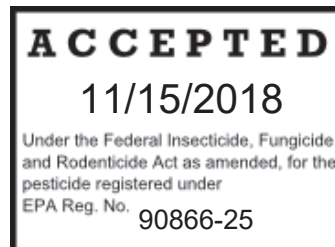
Andrew Bryceland, Team Leader  
Biochemical Pesticides Branch  
Biopesticides and Pollution  
Prevention Division (7511P)  
Office of Pesticide Programs

Enclosure

# Persevere

A plant growth regulator for improving photosynthetic efficiency, enhancing metabolic activity and increasing tolerance to abiotic stress of listed commodities

FOR AGRICULTURAL USE ONLY



<b>ACTIVE INGREDIENTS:</b>	<b>By Wt.</b>
Choline Chloride:.....	6.00%
Gamma Aminobutyric Acid (GABA):.....	5.00%
<b>OTHER INGREDIENTS:.....</b>	<b>89.00%</b>
<b>TOTAL:</b>	<b>100.00%</b>

**KEEP OUT OF REACH OF CHILDREN  
CAUTION**

See (back) (side) panel for additional Precautionary Statements and Directions for Use

<b>FIRST AID</b>	
<b>If in eyes:</b>	<ul style="list-style-type: none"> <li>Hold eye open and rinse slowly and gently with water for 15 to 20 minutes.</li> <li>Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li> <li>Call a poison control center or doctor for treatment advice.</li> </ul>
<p>Have the product container or label with you when calling a poison control center or doctor, or going for treatment. For non-emergency information concerning this product, call the National Pesticides Information Center (NPIC) at 1-800-858-7378 (NPIC Web site: <a href="http://www.npic.orst.edu">www.npic.orst.edu</a>).</p> <p><b>For general product information, call CH Biotech LLC at (909) 472-3033 between the hours of 9 a.m. – 4 p.m. Pacific Time.</b></p>	

EPA REG. NO. 90866-

EPA EST. NO. 90866-CA-001

Produced for: CH Biotech R&D Co., Ltd.  
By CH Biotech LLC.  
601 Kettering Drive, Ontario, CA 91761  
Tel: 909-472-3033  
Email: [info@chbio.com](mailto:info@chbio.com)

Net Contents: 2.5 Gallons (9.642 L)

## **PRECAUTIONARY STATEMENTS**

### **HAZARD TO HUMANS AND DOMESTIC ANIMALS**

#### **PERSONAL PROTECTIVE EQUIPMENT (PPE)**

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Shoes plus socks

Follow the manufacturer's instructions for cleaning and maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

#### **USER SAFETY RECOMMENDATIONS**

- User should wash hands before eating drinking, chewing gum, using tobacco or using the toilet.
- Users should remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Users should remove PPE immediately after handling this product. As soon as possible, wash thoroughly and change into clean clothing.

#### **ENVIRONMENTAL HAZARDS**

For Terrestrial Uses: Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean highwater mark. Do not contaminate water when disposing of equipment wash waters or rinsate.

#### **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 application. For any requirements specific to your State or Tribe, consult the State or Tribal 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), notification to workers, and restricted-entry interval. The requirements in this box apply to uses of this product 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 4 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: coveralls, socks, shoes, chemical resistant gloves.

## PRODUCT INFORMATION

Persevere is a plant growth regulator which facilitates foliar and reproductive growth of crops. Persevere improves plant health by improving the capture of photosynthetic energy, increasing metabolic activity, and preserving cell membrane integrity.

Persevere may be used in routine applications, or as needed to improve tolerance to temperature extremes and other abiotic stressors.

### Application Rates

Optimum product efficacy is dependent on product concentration in the spray solution. Application rates are based on a 0.5% concentration target.

Mix the specified amount of Persevere in water to create a 0.35 - 0.65% solution and apply with sufficient volume for uniform and thorough coverage of foliage and/or fruit. Refer to the specific mixing rates in the table below.

Range Gal/A (Gallons Per Acre)	Gal/A (Gallons Per Acre)	0.5% Rate	Use Rate	12 oz	24 oz	36 oz
0-25	15	9.6	12 oz	0.63%		
	20	12.8		0.47%		
	25	16.0		0.38%		
26-50	30	19.2	24 oz		0.63%	
	35	22.4			0.54%	
	40	25.6			0.47%	
	45	28.8			0.42%	
	50	32.0			0.38%	
51-75	60	38.4	36 oz			0.47%
	70	44.8				0.40%
	75	48.0				0.38%
Over 75	80	40.96	0.4% v/v			
	100	51.2				
	150	76.8				
	200	102.4				

## CROPS

APPLICATION INSTRUCTIONS	
Crop	Application Timing
Berry and Small Fruit including Blackberry, Blueberry, Caneberry, Kiwi and Raspberry. See instructions and rates for Grape and Strawberry below.	1st application: From leaf out until full bloom
	Repeat application at 10 to 14-day interval as conditions dictate
Brassica Vegetables including Broccoli, Cabbage, Cauliflower and Mustard greens	Foliar application: Apply to achieve full coverage
	1st application: At 2 to 4 true leaf stage Repeat application at 10 to 14-day interval as conditions dictate
Bulb Vegetables including Garlic, Leek, Onion	Foliar application: Apply to achieve full coverage
	1st application: At 2 to 4 true leaf stage Repeat application at 10 to 14-day interval as conditions dictate
Corn <sup>(1)(2)</sup> (field pop, sweet)	1st application: From 10 leaves up until full tassel
	Second application may be made 14 days later
Citrus Fruit including Grapefruit, Lemon, Lime, Sweet Orange and Tangerine	1st application: At 10% to full bloom
	May repeat application at 10 to 14-day interval as conditions dictate
Cotton, acala, pima, and short staple varieties	1st application: Pin head square
	May repeat application at 10 to 14-day interval as conditions dictate
Cucurbit Vegetables including Cantaloupe, Cucumber, Honeydew, Muskmelon, Squash (summer and winter) and Watermelon	1st application: Just prior to first bloom
	May repeat application at 10 to 14-day interval as conditions dictate
Fruiting vegetables, such as Tomato, Eggplant, and Pepper	1st application: Just prior to first bloom
	May repeat application at 10 to 14-day interval as conditions dictate
Grape	1st application: At bud swell to full bloom
	Repeat applications may be made at 10 to 14-day interval if conditions reoccur or temp exceeds 90 °F

Non-Grass animal feed and hay such as: Alfalfa, Clover, and Vetch	1st application: At 4 inches of new growth
	Repeat application between cuttings as needed.
Herbs and Spices including Basil, Dill, Mustard and Sage	1st application: At 2-4 leaves
	Repeat application may be made on 14-day interval as conditions dictate
Leafy Vegetables including Celery, Head and Leaf Lettuce, Kale and Spinach	Apply after transplant recovery or early vegetative stage (direct seeded)
	Repeat applications may be made at 10 to 14-day interval if conditions reoccur
Legume Vegetables (succulent and dried) including Beans (all types), Peas, and Soybeans <sup>(1)(2)</sup>	1st application: At 10% bloom
	May repeat application at 10 to 14-day interval as conditions dictate
Oil seed crops including Canola <sup>(1)(2)</sup> , Flax, and Sunflower	1st application: Just prior to first bloom
	May repeat application 10 to 14 days later
Peanut	1st application: At 2-4 leaves
	May repeat application 10 to 14 days later
Pome Fruits including Apple and Pear	1st application: From green-tip to full bloom
	Second application may be made 14 days later as conditions dictate
Root and Tuber Vegetables including Carrot, Ginseng, Horseradish, Parsley (turnip-rooted), Potato, Radish, Sugar Beet, Sweet Potato, Turnip	1st application: From 4 leaves to tuber initiation
	Second application may be made 10 to 14 days later as conditions dictate
Small grains, such as barley, millet, oat, rice, rye, sorghum, and wheat	1st application: At growth stage Feekes 3-4
	Repeat application at 10 to 14-day interval if needed
Strawberry	1st application: Apply after transplant recovery up to first bloom
	May repeat application at 10 to 14-day interval as conditions dictate
Stone fruits, such as cherry, peach, nectarine, apricot, and plum	1st application: From bud swell to full bloom
	May repeat application at 10 to 14-day interval as conditions dictate

Tree nuts, such as almond, hazel nuts, pistachio, walnut, and pecan	1st application: From green bud to full bloom
	May repeat application at 10 to 14-day interval as conditions dictate

<sup>(1)</sup>This product can be tank mixed with glyphosate products registered for use on Roundup Ready® crops.

<sup>(2)</sup>This product can be tank mixed with products registered for use on LibertyLink® crops.

### PRE-TRANSPLANT

To reduce the effects of transplant shock, Persevere can be applied 2-3 days pre-transplant to plants in a greenhouse flat, containers or pre-dug

PRE-TRANSPLANT APPLICATION INSTRUCTIONS			
Crop	Application Timing	Rate/ 1000 square feet	Water Volume/1000 sq. ft.
Berries and Small Fruit Citrus Fruit Fruiting Vegetables Grapes Leafy Vegetables Pome Fruits Strawberry Stone Fruits Tree Nuts	2-3 days pre-transplant	0.25 to 0.5 fl. oz.	50.0 to 100 oz.

### TURFGRASS

**For Turfgrass:** Apply Persevere by ground spray according to the table below using 1.0 to 5.0 gallons of water per 1000 square feet. Use Persevere for weather and compaction stressed turf growth at the dilution rate of 1:200 (6.4 fluid ounces product per 10.0 gallons water).

Turf	Amount (Persevere /Gal Water/1000 Sq Ft*)	Application Directions and Timing
Warm climate grasses including Bermuda, Bermuda hybrids, Centipede, St. Augustine & similar warm season grasses	0.64 to 3.2 fl oz/1.0 to 5.0 gal of water/1000 sq ft	Make applications at 2-week intervals during the growing season
Dichondra	0.64 to 3.2 fl oz/5.0 to 10.0 gal of water/1000 sq ft	Make applications at 2-week intervals during the growing season
Cool Climate grasses including Bluegrass, Fescue, Rye, and similar cool season grasses	0.64 to 3.2 fl oz/1.0 to 5.0 gal of water/1000 sq ft	Make applications at 2-week intervals during the growing season

\*Apply 0.64 fluid ounce per gallon.



## GREENHOUSE AND NURSERY

Differences in responsiveness may vary from one cultivar to another or from one set of growing conditions to another. Unless previous experience dictates otherwise, prior to widespread use, test a small number of plants from each cultivar to verify desired efficacy. For plants that have become heat or cold stressed, follow the application rate and timing recommendation below in the following tables.

### Foliar Plants

Aglaonema	Aphelandra	Dieffenbachia	Fittonia	Maranta	Philodendron	Schefflera	Syngonium
Ajuga	Caladium	Dracaena	Gynura	Palms	Pilea	Schlumbergera	Tradescantia
Anthurium	Cissus	Ficus	Hoya	Peperomia	Pothos	Spathiphyllum	Similar foliage plants
<b>Application Rates and Timing:</b> Dilute 6.4 fluid ounce of Persevere in 10.0 gallons of water (1:200 dilution rate) when plants have at least 4 leaves. Repeat applications at 10 to 14-day intervals when required. Apply the last spray 1 to 2 weeks prior to sale. Uniform and thorough spray coverage is necessary for best results.							

### Bedding and Flowering Plants

Abutilon	Carnation	Coral Bells	Foxglove	Gladiolus	Lily	Osmachus	Salvia	Vinca
Aglais	Champaca	Cyclamen	Fuchsia	Gloxinia	Lupine	Petunia	Scabiosa	Zinnia
Alyssum	Chrysanthemum	Dahlia	Gardenia	Impatiens	Marigold	Poinsettia	Sedum	Similar plants
Calceolaria	Cineraria	Delphinium	Gazania	Iris	Michelia	Portulaca	Sempervivum	
Canna	Columbine	Dianthus	Geranium	Jasminum	Monarda	Roses	Tulips	
<b>Application Rates and Timing:</b> Dilute 6.4 fluid ounce of Persevere in 10.0 gallons of water (1:200 dilution rate) when plants have at least 4 leaves. Repeat applications at 10 to 14-day intervals when required. Apply the last spray 1 to 2 weeks prior to sale. Uniform and thorough spray coverage is necessary for best results.								

### Woody Ornamentals

Arborvitae	Azalea	Carissa	English ivy	Juniper	Pine	Rhododendron	Similar plants
Aucuba	Boxwood	Chinese magnolia	Holly	Maple	Podocarpus	Viburnum	
<b>Application Rates and Timing:</b> Dilute 6.4 fluid ounce of Persevere in 10.0 gallons of water (1:200 dilution rate) when plants have at least 4 leaves. Repeat applications at 10 to 14-day intervals when required. Apply the last spray 1 to 2 weeks prior to sale. Uniform and thorough spray coverage is necessary for best results.							

### Tree Fruits (Not for Residential Use)

Apple	Cherry	Grape	Lemon	Mango	Persimmon	Starfruit
Asian pear	Fig	Jujubee	Litchi	Orange	Plum	Similar plants
Apricot	Guava	Kumquat	Longara	Peach	Prunes	
<b>Application Rates and Timing:</b> Dilute 6.4 fluid ounce of Persevere in 10.0 gallons of water (1:200 dilution rate) when plants have leafed out. Repeat applications at 10 to 14-day intervals when required. Apply the last spray 1 to 2 weeks prior to sale. Uniform and thorough spray coverage is necessary for best results.						

## STORAGE AND DISPOSAL

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

**PESTICIDE STORAGE:** Keep containers tightly closed when not in use.

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

**CONTAINER HANDLING:** Non-refillable container. Do not reuse or refill this container.

Triple Rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container  $\frac{1}{4}$  full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke.

## LIMITED WARRANTY AND DISCLAIMER

The manufacturer warrants that this product conforms to the chemical description on the label; that this product is reasonably fit for the purposes set forth in the Directions for Use when it is used in accordance with such Directions; and that the Directions, and other statements on this label, are based upon responsible experts' evaluation of reasonable tests of effectiveness, of toxicity to laboratory animals and to plants, and of residues on food crops and upon reports of field experience. Tests have not been made on all varieties or in all states or under all conditions.

TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, THE MANUFACTURER NEITHER MAKES NOR INTENDS, NOR DOES IT AUTHORIZE ANY AGENT OR REPRESENTATIVE TO MAKE, ANY OTHER WARRANTIES, EXPRESS OR IMPLIED, AND IT EXPRESSLY EXCLUDES AND DISCLAIMS ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW THIS WARRANTY DOES NOT EXTEND TO, AND THE BUYER SHALL BE SOLELY RESPONSIBLE FOR, ANY AND ALL LOSS OR DAMAGE WHICH RESULTS FROM THE USE OF THIS PRODUCT IN ANY MANNER WHICH IS INCONSISTENT WITH THE LABEL DIRECTIONS. BUYER'S EXCLUSIVE REMEDY AND MANUFACTURER'S OR SELLER'S EXCLUSIVE LIABILITY FOR ANY AND ALL CLAIMS, LOSSES, DAMAGES OR INJURIES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, WHETHER OR NOT BASED IN CONTRACT, NEGLIGENCE, STRICT LIABILITY IN TORT OR OTHERWISE SHALL BE LIMITED, TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, AT THE MANUFACTURER'S OPTION, TO REPLACEMENT OF, OR THE REPAYMENT OF THE PURCHASE PRICE FOR, THE QUANTITY OF PRODUCT WITH RESPECT TO WHICH DAMAGES ARE CLAIMED. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, IN NO EVENT SHALL MANUFACTURER OR SELLER BE LIABLE FOR SPECIAL, INDIRECT, INCONSEQUENTIAL, OR PUNITIVE DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT.