

 FOR  
**ORGANIC**  
PRODUCTION

- **Fast acting**
- **Does not stain brick, concrete or pavement**
- **Clean citrus scent**

**KEEP OUT OF REACH  
OF CHILDREN  
CAUTION**

**NET CONTENTS:  
1 Gal. (128 oz) (3.78 L)**

ACTIVE INGREDIENT:  
d-limonene.....55%  
OTHER INGREDIENTS: .....45%  
Total.....100.0%  
\*4.07 lbs d-limonene per gallon

EPA Reg. No. 92967-4 EPA Est. No. 92967-GA-1

GROUP Z | HERBICIDE

**AVENGER**<sup>®</sup>

# AG Optima

## Burndown Herbicide

**For Control of Grasses and  
Broadleaf Weeds (both Annual  
and Perennial) in Crop  
and Non-Crop Areas**



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# PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS



**AG Optima  
Burndown  
Herbicide**

**CAUTION:** Harmful if absorbed through skin. Causes moderate eye irritation. Avoid contact with skin, eyes or clothing.

FIRST AID	
<b>If on Skin or Clothing:</b>	<ul style="list-style-type: none"> <li>Take off contaminated clothing.</li> <li>Rinse skin immediately with plenty of water for 15-20 minutes.</li> <li>Wash exposed area with soap and water. If irritation persists, seek medical attention.</li> <li>Call a poison control center or doctor for treatment advice.</li> </ul>
<b>If in Eyes:</b>	<ul style="list-style-type: none"> <li>Hold eye open and rinse slowly and gently with water for 15-20 minutes.</li> <li>Remove contact lens, 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 emergency information concerning this product, call the National Pesticide Information Center (NPIC) at 1-800-858-7378 seven days a week, 6:30 am to 4:30 pm Pacific Time. During other times, call your poison control center at 1-800-222-1222.</p>	

**Personal Protective Equipment (PPE):** Applicators and other handlers must wear:

- Long sleeved shirt and pants
- Shoes plus socks
- Protective eyewear
- Waterproof gloves

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

### User Safety Recommendations

- User should:**
- Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet.
  - Remove clothing immediately if product gets inside. Then wash thoroughly and put on clean clothing.

**PHYSICAL AND CHEMICAL HAZARDS:** Combustible: Do not use or store near heat or open flame.

**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 disposing of equipment wash water 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 use this product until you have read the entire label. 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 requirement 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 intervals. 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:

- Long sleeved shirt and pants
- Shoes plus socks
- Protective eyewear
- Waterproof gloves

### Non-Agricultural Use Requirements

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses. Keep children and pets out of the treated area until sprays have dried.

### Product Information:

Avenger® AG Optima is a broad spectrum weed killer that contains a citrus extract. It is non-selective and controls most annual and perennial weeds, both grasses and broadleaves. **For best performance, complete coverage of target weeds is necessary.** The product does not translocate. It will affect only those portions of plants that are coated with spray solution. **Spray until thoroughly wet.**

**Weed size influences product efficacy as performance is improved on smaller weeds. Targeted weeds should be six inches in height or less.**

### Environmental Conditions:

Avenger® AG Optima is effective over a wide range of environmental conditions. Cool weather may slow the activity of the product. For best results, spray when ambient high temperatures are expected above 50°F and lows above freezing. On cooler days, spray during the warm part of the day. Allow heavy dew to evaporate prior to Avenger® AG Optima applications. Do not apply if windy conditions exist or rain is expected within 2 hours.

### Mixing of Avenger AG Optima:

Fill the spray tank ½ full with clean water. Add Avenger AG Optima while agitating. Then fill remainder with water.

### Tank Mixing of Avenger® AG Optima:

Fill the spray tank ½ full with clean water. Add any dry formulations and then liquid formulations to the tank. Add Avenger® AG Optima while agitating. Then fill remainder with water.

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#### Tank Mix Combinations:

When Avenger® AG Optima is used in combination with any other products, refer to the respective product labels for rates and methods of application, proper timing, restrictions and precautions. It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

#### Compatibility Testing:

If the compatibility with another product is not known, a jar test or physical compatibility study should be conducted before tank mixtures are made. To determine compatibility, add the appropriate amount of Avenger® AG Optima to a quart jar and mix the correct amounts of other products, bringing the total volume to 1 quart with water. Mix with agitation and then let stand for 5 minutes. Add the dry formulations first, followed by the aqueous flowables, and the emulsifiable concentrates last. If combinations do not precipitate and can be readily remixed, then all products are compatible.

#### Restrictions:

Do NOT exceed 5 gallons of Avenger® AG Optima (20.4 lbs. d-limonene) per acre per application. Do NOT exceed a total of 16 gallons of Avenger® AG Optima (65.1 lbs. d-limonene; Table 1) per acre per year. Determine the final desired finished spray volume according to the appropriate dilution as describe in Table 1. Irrigation and Aerial Applications: Do not apply this product through any type of irrigation system or by aerial application.

#### Spray Drift Management:

Follow directions for minimizing spray drift. Do not allow the herbicide solution to contact desirable vegetation as small amounts can cause severe damage to crops and other desirable plants.

**AVOID CONTACT WITH CROP** – Intentional or accidental contact (including drift) of Avenger® AG Optima with the crop may result in severe damage or loss of the crop.

#### Application Instructions and Rates

Mix this product in clean water and apply to the foliage of vegetation to be controlled. Spray until weeds are thoroughly wet. Because the underside of the weed leaf may be more susceptible, side sprays are recommended.

Four types of applications are described below: Broadcast, Banded, Spot and Pre-Harvest Desiccation. Mixing volumes for two dilution rates are found in Table 1. Apply Avenger® AG Optima at a 7-10% mixture depending on the size of the weeds. For smaller, young, actively growing weeds, apply the lower 7% mixture. For controlling larger, tough to kill weeds, use the higher 10% mixture. Use the lowest mixture whenever possible to control weeds.

**Broadcast Applications:** Broadcast treatments are used for burndown of unwanted weeds across a field or a plot or apply to burndown winter foliage. Apply Avenger® AG Optima at pre-emergence or at planting. Applications must be made before seedling emergence to avoid severe injury. Allow at least 2 days between application and transplanting. Spray until weeds are thoroughly wet.

**Banded Applications:** Control or suppression of emerged weeds in row middles and between vines and trees. Apply Avenger® AG Optima at a 7-10% mixture depending on the size of the weeds. Only use the 10% mixture when absolutely necessary to control difficult weeds. Apply by directing spray between the rows and using hooded sprayers to prevent spray contact with crop plants. Keep hoods adjusted to ensure adequate contact with weeds while shielding the crop from the herbicide. To minimize drift, do not use nozzles or nozzle configurations that produce fine droplets (mist).

**Spot Applications:** In cool situations or for tough to kill weeds, a more concentrated spray of d-limonene may be needed. In such situations, a 10% mixture of Avenger® AG Optima (1:10 mixture) may be used up to one (1) week before harvest (see Table 1).

**Pre-Harvest Desiccation of Vegetable Vines:** Apply Avenger® AG Optima at a 7 or 10% mixture to aid in the desiccation of vegetable vines prior to harvest operations. A second application may be necessary to obtain sufficient desiccation.

Desired spray volume (gallons)	7%	10%
1	9 fl. oz	13 fl. oz
60	4.2 gal	6 gal
100	7 gal	10 gal
160	11.2 gal	16 gal
228	16 gal	N/A

#### Directions for Minimizing Spray Drift

Spray directly on weeds (or apply with hooded spray equipment to prevent the spray from contacting crop). Use equipment to direct spray onto the weeds. Do not use mist blowers or any other application techniques, which may result in drift onto desirable vegetation. Do not allow spray solution to drip, splash or drift onto desirable vegetation, as small amounts can cause severe damage to crops. Use low drift, low pressure nozzles.

These procedures will also reduce the potential for off-target drift and for crop injury:

- Spray hoods must be operated on the ground or skimming across ground surface.
- Operate at ground speeds of no greater than 5 miles per hour to avoid bouncing of the spray hoods.
- Apply when winds speeds are 10 miles per hour or less.

Avenger® AG Optima is intended for non-selective weed control in and around all crop and non-crop areas.

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## For USE IN and AROUND ALL FOOD CROPS & NON-CROP AREAS

Crop	Including:
<b>Bearing and Non-Bearing Tree, Vine and Berry Crops, including:</b>	Berries* Citrus Grapes (wine, table, raisin) Nuts Olives Pomegranate Pome Fruit Stone Fruit
<b>Vegetable Crops Including:</b>	Artichokes Asparagus Brassica (cole) Bulb Vegetables Cucurbits Fruiting Vegetables, including tomato and pepper Leafy Vegetables Legume Vegetables Root and Tuber Vegetables Strawberries
<b>Herbs and Spices:</b>	All
<b>Non-Crop Areas:</b>	Including borders, driveways, roadways, sidewalks, around mature landscaping, trees, shrubs, foliage and ornamentals, around buildings, in greenhouses and nurseries, and around flowerbeds.

\*Not for use in California on berries of any kind

### STORAGE AND DISPOSAL

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

#### PESTICIDE STORAGE:

Store at room temperature. Reclose container of unused portions of Avenger AG.

#### PESTICIDE DISPOSAL

To avoid wastes, use all material in this container by application according to panel directions. If wastes cannot be avoided, offer remaining product to a waste disposal facility or pesticide disposal program (often such programs are run by state or local governments or by industry).

#### CONTAINER HANDLING

Nonrefillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. 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 ¼ 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. Do not burn, unless allowed by state and local ordinance. If burned, stay out of smoke.**

#### Conditions of Sale and Warranty

The **Directions For Use** of this product reflects the opinion of experts based on field use and tests. The directions are believed to be reliable and should 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 factors such 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 Avenger® Products, LLC or the Seller. All such risks are assumed by the Buyer.

To the extent consistent with applicable law, Avenger® Products, LLC 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, Avenger® Products, LLC 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, in no case shall Avenger® Products, LLC or the seller be liable for consequential, special or indirect damages resulting from the use or handling of this product. To the extent consistent with applicable law, Avenger® Products, LLC 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 Avenger® Products, LLC.