

CLICK HERE TO JUMP TO USE DIRECTIONS



# STRONGHOLD™

## PLANT GROWTH REGULATOR

**ACTIVE INGREDIENTS:**

- Diethanolamine salt of mefluidide\* (N-[2,4-dimethyl-5-[[[(trifluoromethyl)sulfonyl]amino]phenyl]acetamide]) . . . . . 21.45%
- Ammonium salt of imazethapyr [(±)-2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1-H-imidazol-2-yl]-5-ethyl-3-pyridinecarboxylic acid] . . . . . 4.09%
- Ammonium salt of imazapyr [2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1-H-imidazol-2-yl]-3-pyridinecarboxylic acid]] . . . . . 0.15%
- OTHER INGREDIENTS:** . . . . . 74.31%
- TOTAL** 100.00%

This product contains:  
 1.46 pounds acid equivalent of mefluidide per gallon or 16.02%.  
 0.35 pounds acid equivalent of imazethapyr per gallon or 3.86%.  
 0.01 pounds acid equivalent of imazapyr per gallon or 0.14%.

### KEEP OUT OF REACH OF CHILDREN

# CAUTION

See below for Precautionary Statements and First Aid.

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 EPA REG. NO. 2217-802

Manufactured By  
**pb/gordon**  
**CORPORATION**  
 An Employee-Owned Company  
 1217 West 12th Street  
 Kansas City, Missouri 64101  
[www.pbigordon.com](http://www.pbigordon.com)



**READ THE ENTIRE LABEL FIRST. OBSERVE ALL PRECAUTIONS AND FOLLOW DIRECTIONS CAREFULLY.**

### PRECAUTIONARY STATEMENTS

**Hazards to Humans and Domestic Animals**

**CAUTION:** Causes eye irritation. Harmful if inhaled or absorbed through the skin. Avoid contact with skin, eyes or clothing. Applicators and other handlers must wear long sleeved shirt and long pants, shoes plus socks, and waterproof gloves. After using this product, thoroughly wash hands and exposed skin with soap and water. Remove contaminated clothing and launder before reuse.

### FIRST AID

<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 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>
<b>If inhaled:</b>	<ul style="list-style-type: none"> <li>• Move person to fresh air.</li> <li>• If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>If swallowed:</b>	<ul style="list-style-type: none"> <li>• Call a poison control center or doctor immediately for treatment advice.</li> <li>• Have person sip a glass of water if able to swallow.</li> <li>• Do not induce vomiting unless told to do so by a poison control center or doctor.</li> <li>• Do not give anything by mouth to an unconscious person.</li> </ul>
<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>• Call a poison control center or doctor for treatment advice.</li> </ul>

Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact 1-877-800-5556 for emergency medical treatment advice.

**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 washwaters. Do not allow spray to drift onto nontarget crops or vegetation.

### DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Not for use on turf being grown for sale or other commercial use as sod, or for commercial seed production, or for research purposes.

### STORAGE AND DISPOSAL

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

**PESTICIDE STORAGE:** Keep from freezing.

**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:** For Plastic Containers — Triple rinse (or equivalent). Then offer for recycling or reconditioning, 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.

STRONGHOLD Plant Growth Regulator (PGR) can be incorporated into highway vegetation management programs to eliminate seedhead production and to reduce the mowing requirements. STRONGHOLD PGR may be useful in the following noncropland areas:

- Highway rights-of-way (principal, interstate, state, and county highways), interchange ramps, waysides, service areas, and unpaved roads
- Municipal, state, and federal lands such as airports and military installations.
- Commercial/Industrial areas including industrial parks, tank farms, plant sites, storage areas, fencerows, and utility rights-of-way.

STRONGHOLD PGR inhibits the growth of bahiagrass, tall fescue, smooth brome grass, orchardgrass, and Kentucky bluegrass. All established stands of these grasses should be at least one year old.

### SPRAY EQUIPMENT AND MIXING INSTRUCTIONS

**SPRAY EQUIPMENT:**

Use conventional power spray equipment with bypass or mechanical agitation and fitted with a spray boom, off-center nozzles, or spray gun.

It is essential that the spray equipment is properly adjusted and calibrated to assure proper dosage and uniform spray coverage. Follow the spray equipment manufacturer's directions for cleaning, adjusting pressure and selecting appropriate nozzles.

**SPRAY VOLUMES:**

Spray volumes of 15 to 150 gallons per acre are recommended. Uniform applications are essential. Avoid spray overlaps that will increase the dosage above those recommended.

**SURFACTANTS AND SPRAY COLORANTS:**

The use of a nonionic surfactant is recommended to increase the extent and consistency of the growth regulation. The suggested surfactant rate is 0.25 to 0.50% vol/vol or 1 to 2 quarts per 100 gallons of spray solution. Temporary, slight discoloration of the turf may increase with the use of a surfactant.

The use of Gordon's Spray Colorant is recommended to allow the applicator to make uniform application.

**SPRAY PREPARATION FOR STRONGHOLD PGR ALONE:**

1. Pour the required amount of STRONGHOLD PGR into the spray tank containing approximately one-half (½) the required amount of water.
2. When thoroughly mixed, add the measured amount of nonionic surfactant.
3. Add Gordon's Professional Spray Colorant to the spray tank to ensure the uniformity of the application. Refer to instructions with this colorant for the proper concentration.
4. Fill the tank as required with water and spray as recommended.

**SPRAY PREPARATION FOR STRONGHOLD PGR**

**TANK MIXTURES:**

STRONGHOLD PGR may be applied in combination with one or more of the specified herbicides or plant growth regulators. These tank mixtures must be used according to the most restrictive label

limitations and precautions. No label dosage rate should be exceeded. Follow the labeling of each companion product for precautionary statements, directions for use, dosage rates, and application schedules. Tank mixture recommendations are for use only in states where the companion products and application site are registered.

Follow these guidelines and refer to the labeling of the companion product for further instructions.

1. Add one-half (½) to two-thirds (⅔) of the required amount of water into the spray tank.
2. Add the appropriate amount of the companion product (dispersible granules or dimethylamine salt formulations) into the spray tank with agitation.
3. Pour the appropriate amount of STRONGHOLD PGR into the spray tank.
4. Continue agitation while adding the remainder of water and add the measured amounts of nonionic surfactant and spray colorant.
5. Continue agitation throughout the spraying operation.

### SEEDHEAD SUPPRESSION

The application window or timing is critical for the optimum seedhead control.

Generally, the application window for the best results will range from 2 to 3 weeks for the cool season grasses. The beginning of the application window for the cool season grasses occurs in the spring after full greenup with rapid vertical growth. The end of the application window occurs approximately 2 weeks prior to the seedhead appearance or when the seedhead can be felt at the base of the stem. Applications of STRONGHOLD PGR after the optimum window will result in reduced seedhead suppression.

STRONGHOLD PGR must be applied prior to the seedhead appearance at the stem apex. Application of STRONGHOLD PGR after the seedhead emergence will suppress only the later forming seedheads.

Bahiagrass seedheads are produced from late spring until early fall. An application of STRONGHOLD PGR in the spring will provide seedhead inhibition for 6 to 10 weeks and will suppress the vegetative growth for 4 to 5 weeks. Apply STRONGHOLD PGR after full greenup of the bahiagrass with at least two inches of vertical growth (April-May). Applications of STRONGHOLD PGR must be made prior to seedhead (boot) emergence.

STRONGHOLD PGR should be used according to the recommendations on this label. Refer to Table 1 for the application rate recommended for established turfgrass in noncropland sites.

### VEGETATIVE GROWTH SUPPRESSION

STRONGHOLD PGR will provide growth inhibition for cool season grasses 6 to 8 weeks under favorable growing conditions. Apply STRONGHOLD PGR with a nonionic surfactant after full greenup of turfgrass in the spring. At the time of treatment, turf should have developed the desired appearance, the desired height, and sufficient leaf area for uptake.

Apply 12 to 16 fluid ounces (fl. oz.) of STRONGHOLD PGR per acre with a nonionic surfactant to actively growing turf for growth suppression up to 8 weeks. Refer to Table 1 for the recommended rates for tank mixtures applied to low maintenance turf.

STRONGHOLD PGR will suppress the vegetative height of bahiagrass for 4 to 5 weeks. Tank mixtures of STRONGHOLD PGR and Oust® Herbicide Dispersible Granules will extend the period of growth suppression up to 8 to 10 weeks. Refer to Table 1 for the rate recommendations for bahiagrass.

**Table 1. Application Rate Recommendations for STRONGHOLD PGR and tank mixtures for established turfgrasses in noncropland sites.**

Product Name	Amount of Product		Nonionic Surfactant, % vol/vol	Comments
	fl. oz./acre	ounces/acre		
<b>A. BAHIAGRASS</b>				
1. STRONGHOLD PGR	28-38	—	0.25	For growth suppression, apply after grasses are at 100 percent greenup with at least two inches of vertical growth. Use the higher dosage rate for more extended periods of foliar growth suppression. For seedhead suppression, apply prior to seedhead (boot) emergence.  Do not use this product with Telar® Herbicide Dispersible Granules on bahiagrass turf because severe injury will occur.  STRONGHOLD PGR may be used prior to or sequential to all currently registered herbicides EXCEPT there must be a three month interval of grass growth between applications of STRONGHOLD PGR and sulfonylurea and imidazolinone herbicide applications.
2. STRONGHOLD PGR plus Oust® Herbicide Dispersible Granules	24-26	— 1/8 - 1/4	0.25	For growth suppression, apply after grasses are at 100 percent greenup with at least two inches of vertical growth. Use the higher dosage rate for more extended periods of foliar growth suppression.  For seedhead suppression, apply prior to seedhead (boot) emergence.  STRONGHOLD PGR may be used prior to or sequential to all currently registered herbicides EXCEPT there must be a three month interval of grass growth between applications of STRONGHOLD PGR and sulfonylurea and imidazolinone herbicide applications.
<b>B. TALL FESCUE, KENTUCKY BLUEGRASS, AND MIXED STANDS OF FESCUE/BUEGRASS.</b>				
1. STRONGHOLD PGR	12-16	—	0.25	Apply after grasses are at 100 percent greenup with at least two inches of vertical growth. On finer turfgrass areas where more uniform quality is desired, apply after two mowings. For seedhead suppression, apply prior to seed stalk elongation and seedhead emergence. STRONGHOLD PGR may be used prior to or sequential to all currently registered herbicides EXCEPT there must be a three month interval of grass growth between applications of STRONGHOLD PGR and sulfonylurea and imidazolinone herbicide applications.
2. STRONGHOLD PGR plus Telar® Herbicide Dispersible Granules	6-8	— 1/8	0.25	Do not apply Telar® Herbicide Dispersible Granules plus STRONGHOLD PGR to turf that is under stress from drought, insects, disease, cold temperatures or poor fertility, as injury may result. Do not apply to turf less than 1 year old. Do not exceed ½ ounce Telar® Herbicide Dispersible Granules per acre within a 12 month period.
3. STRONGHOLD PGR plus Hi-Dep® IVM Broadleaf Herbicide, 3.8# a.e./gal.	12-16 64	— —	0.25	Do not apply this tank mixture to turf that is under stress from drought, insects, disease, cold temperatures, or poor fertility, as injury may result. Do not apply to turf less than 1 year old.
<b>C. MIXED STANDS OF FESCUE/BUEGRASS, SMOOTH BROMEGRASS, AND ORCHARDGRASS.</b>				
1. STRONGHOLD PGR plus Arsenal® Herbicide, 2.0# a.e./gal.	12-16 1.5	— —	0.25	Differential responses of mixed turf species may occur with STRONGHOLD PGR and may result in a nonuniform appearance. Determine the predominant species in the mixed turf and follow the application schedule/window for the species most commonly found.

## **IRRIGATION AND RAINFALL**

Optimum results may not be obtained if rainfall or overhead irrigation occurs within 8 hours following application.

## **STRESSES**

Applications of STRONGHOLD PGR to turfgrass that is stressed because of high air temperatures, drought, excessive soil water, diseases, or insects may cause temporary discoloration. Management practices to promote the health and vigor of the turfgrass should be continued on the treated areas.

## **PRECAUTIONS AND LIMITATIONS**

1. DO NOT apply this product through any irrigation system.
2. Turf treated with STRONGHOLD PGR may appear less dense and temporarily discolored when compared with untreated, actively growing turf.
3. DO NOT allow animals to graze on treated areas.
4. DO NOT apply to any body of water such as lakes, streams, rivers, canals, ponds, reservoirs, or bays. Also, do not apply to areas where water is present on the soil surface such as swamps, bogs, potholes, or marshes. However, it is allowable to treat seasonally dry swamps, bogs, potholes, or marshes, berms of ditches, and road shoulders.
5. DO NOT apply when wind velocity is greater than 10 mph.
6. STRONGHOLD PGR may be tank mixed with methylarsonate herbicides such as MSMA or DSMA. DO NOT tank mix with other postemergence grass herbicides labeled for use in turfgrass.
7. DO NOT use on newly established stands less than 1 year old.
8. DO NOT reseed before three months following an application of STRONGHOLD PGR.
9. DO NOT use on ornamental plants as injury may result.

## **LIMITED WARRANTY AND DISCLAIMER**

The manufacturer warrants only that the chemical composition of this product conforms to the ingredient statement given on the label, and that the product is reasonably suited for the labeled use when applied according to the Directions for Use.

**THE MANUFACTURER NEITHER MAKES NOR INTENDS ANY OTHER EXPRESS OR IMPLIED WARRANTIES, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, WHICH ARE EXPRESSLY DISCLAIMED.** This limited warranty does not extend to the use of the product inconsistent with label instructions, warnings or cautions, or to use of the product under abnormal conditions such as drought, excessive rainfall, tornadoes, hurricanes, etc. These factors are beyond the control of the manufacturer or the seller. Any damages arising from a breach of the manufacturer's warranty shall be limited to direct damages, and shall not include indirect or consequential damages such as loss of profits or values, except as otherwise provided by law.

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