

7969-188

03/29/2004

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**BASF**

ACCEPTED
MAR 29 2004
Under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended, for the pesticide registered under EPA Reg. No. 7969-188

# Apogee®

plant growth regulator

For use on apples, grass grown for seed, peanuts and pears

**Active Ingredient:**

Prohexadione calcium [calcium 3-oxido-5-oxo-4-propionylcyclohex-3-enecarboxylate].....27.5%

**Other Ingredients:**.....72.5%

**Total:**.....100.0%

EPA Reg. Number 7969-188

EPA Est. Number

**KEEP OUT OF REACH OF CHILDREN.**

**CAUTION**

See inside booklet for complete **First Aid, Precautionary Statement, Directions For Use, and Conditions of Sale and Warranty.**

**Net contents: \_\_\_ pounds (\_\_\_ kilograms)**

Product of Japan; formulated in U.S. with U.S. and imported ingredients

BASF Corporation  
26 Davis Drive  
Research Triangle Park, North Carolina 27709

<b>FIRST AID</b>	
If in eyes	<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 first 5 minutes, then continue rinsing eye.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
If on skin or clothing	<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>
<b>HOT LINE NUMBER</b>	
<p>Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact BASF Corporation for emergency medical treatment information: 1-800-832-HELP (4357).</p>	

### **Precautionary Statements**

#### **Hazards to Humans and Domestic Animals**

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

#### **Personal Protective Equipment (PPE)**

Some materials that are chemical-resistant to this product are listed below. If you want more options, follow the instructions for category A on the EPA chemical-resistance category selection chart.

#### **Applicators and other handlers must wear:**

- Long-sleeved shirt and long pants
- Chemical-resistant gloves made of any waterproof material such as polyethylene or polyvinyl chloride
- Shoes plus socks

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

#### **Engineering Controls Statement**

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

### **User Safety Recommendations**

#### **Users should:**

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- 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.

#### **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 waters or rinsate.

### **Endangered Species Concerns**

The use of any pesticide in a manner that may kill or otherwise harm an endangered species or adversely modify their habitat is a violation of Federal law.

### **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 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 **12 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
- Chemical-resistant gloves made of any waterproof material
- Shoes plus socks

### **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 agency responsible for pesticide regulation.

All applicable directions, restrictions, precautions and **Conditions of Sale and Warranty** are to be followed.

## Storage and Disposal

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

**Pesticide Storage:** Store in a cool, dry place. Do not remove the product from the container except for immediate use.

**Pesticide Disposal:** Wastes resulting from this product may be disposed of at an approved waste disposal facility. Excess pesticide, spray mixture or rinsate must be handled and disposed of in accordance with federal, state or local procedures. Improper disposal of excess pesticide, spray mix, or rinsate is a violation of federal law. If these wastes cannot be disposed of according to label instructions, contact the state agency responsible for pesticide regulation or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

### Container Disposal:

**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.

### In Case of Spill

In case of large-scale spillage regarding this product, call:

CHEMTREC 800-424-9300

## I. General Information

### Apples and Pears

**Apogee® plant growth regulator** is a unique production management tool for apple and pear orchards that reduces vegetative growth allowing a balance between canopy development and fruit production. **Apogee** provides many beneficial effects including:

- Vegetative growth control
- Reduced need for summer and dormant pruning
- Improved light penetration into the tree canopy
- Improved color of red varieties because of better light penetration into the canopy
- Reduced incidence and severity of fire blight of shoots (shoot blight)

### Mode of Action

**Apogee** acts within apple and pear trees to inhibit the biosynthesis of gibberellin, which is the natural plant hormone that regulates cell elongation. Inhibition of gibberellin therefore reduces shoot growth. Vegetative growth suppression with **Apogee** typically lasts for 2-5 weeks per application during the current growing season. **Apogee** does not affect vegetative growth the following year.

**Gibberellic acids:** When gibberellic acid sprays, such as **ProVide® Plant Growth Regulator**, etc., are applied in the same season as **Apogee** to reduce cracking or reduce russetting, a loss in efficacy may occur in the **Apogee** and/or the gibberellin spray.

**Thinning:** Applying **Apogee** may cause a tree to retain more fruit (see recommendation to decrease June drop in **Table 2**). Therefore, thinning programs may need adjustment when using **Apogee**.

**Fire blight of shoots (shoot blight):** Controlling vegetative growth with **Apogee** as recommended in **Table 3** will reduce the incidence and severity of fire blight infection (*Erwinia amylovora*) of shoots and leaves. **Apogee** does not have direct antibiotic activity against the fire blight bacteria (*Erwinia amylovora*), but **Apogee** can decrease host susceptibility. **Apogee** applications are not effective for suppression of blossom blight. For maximum reduction in fire blight susceptibility, **Apogee** should be applied at least 10 days before the occurrence of weather conditions favorable for shoot and leaf infections. **Apogee** reduces the susceptibility of apple shoot tips to fire blight and should be used as one component of a comprehensive IPM strategy for control of fire blight. This decrease in susceptibility will not become effective until about 10 days after application.

**Tree-Row Volume (TRV):** Using **Apogee** as part of a management program significantly reduces the tree row volume. Spray guides typically recommend using the tree row volume to determine the correct pesticide application rates. Growers are advised to contact their local cooperative extension service or consultant for additional information regarding tree row volume.

### Coverage

Because **Apogee** is absorbed by the leaves, thorough spray coverage of the tree foliage is necessary for good uptake. The spray should be directed to the portion of the tree where growth control is desired. To achieve good coverage, use sufficient water, proper spray pressure, nozzles, nozzle spacing, spray volume per acre, and tractor speed. Consult the spray nozzle and accessory guide for information pertaining to proper equipment calibration.

Aerial application of **Apogee** generally only provides coverage of the top of the tree canopy, and vegetative growth control will be limited to those areas that receive spray coverage.

### Cleaning Spray Equipment

Clean spray equipment thoroughly using a strong detergent or commercial sprayer cleaner according to the manufacturer's directions before and after applying this product.

### Grass Grown for Seed

**Apogee** is a production management tool for producers of grass grown for seed. **Apogee** reduces vegetative growth (shorter internode length), and thus reduces the potential for lodging. Reduced lodging can lead to improved pollination, increased seed set, and better harvest efficiency. **Apogee** does not affect vegetative growth the following year.

### Mode of Action

**Apogee** acts within the grass plant to inhibit the biosynthesis of gibberellin resulting in a decrease in cell elongation and a reduction in vegetative growth. The

performance of **Apogee® plant growth regulator** can be affected by many factors including: crop growth stage, environmental conditions, plant vigor, moisture availability, fertility level, and cultural practices that affect crop vigor.

### Spray Coverage

**Apogee** is a systemic growth regulator and must be absorbed into the leaves to be effective. Use enough volume of spray to thoroughly wet the leaves without runoff. **Apogee** is rainfast within 1 hour of application. The growth regulator effects of **Apogee** do not occur by soil uptake.

## Peanuts

**Apogee** is a plant growth regulator for controlling the vegetative growth of peanuts in Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, New Mexico, North Carolina, Oklahoma, South Carolina, Texas, and Virginia.

### Mode of Action

**Apogee** acts within a peanut plant to inhibit the biosynthesis of gibberellin. The result is a decrease in cell elongation and a reduction in vegetative growth. Under normal use patterns, **Apogee** will not affect the number of leaves, but will decrease the distance between leaves (internode length).

### Spray Coverage

Because **Apogee** is absorbed by the peanut leaves, adequate spray coverage of the foliage is necessary for good uptake.

### Cleaning Application Equipment

Clean application equipment thoroughly using a strong detergent or commercial sprayer cleaner according to the manufacturer's directions before and after applying this product, particularly if a product with the potential to injure crops was used.

## II. Application Instructions

### Apples and Pears

Apply **Apogee** to actively growing trees with ground equipment at rates and stages listed in **section VII**. **Crop-Specific Information** (see **Tables 1-4, 7**).

**Timing:** For vegetative growth control, make the first application of **Apogee** in the spring when trees have 1-3" of new shoot growth. **Correct timing of application is critical to success.** An early first application (i.e., 1-2" of shoot growth) is more effective than a late application (i.e., 6-8" of shoot growth). If required, make a sequential application 1-4 weeks after the first application and do this before or immediately after the shoots show signs of regrowth.

**Number of applications:** The number of applications will vary depending on the timing of the first application, tree vigor, fruit load, pruning, variety, rootstock and/or the management history of the orchard. For either apple or pear orchards in locations with long growing seasons or higher vigor trees or trees with light fruit load, 3-5 applications per season may be more effective. The treatment schedule with **Apogee** is flexible and can be applied in a number of different schedules depending on the objectives of the individual grower (see **Tables 1-4, 7**). Consult with an extension specialist or consultant for your specific area.

**Tree Vigor:** Adjust the **Apogee** rate according to the vegetative vigor of the trees (see **Tables 1-4, 7**). Vegetative vigor can be influenced by many factors, including fruit load, pruning, variety, rootstock, and location. A grower's experience is the best guide in predicting tree vigor. Some trees exhibit excessive shoot growth (high vigor) every year due to a combination of variety, rootstock, and location. However, trees that normally exhibit typical shoot growth can exhibit excessive growth in some years due to crop loss or severe winter pruning.

**Tree Size:** Calculate the **Apogee** rate per acre based on tree size. The application rate should be based on the volume of water needed to spray the trees to drip (i.e., dilute spray or Tree Row Volume).

**Application Rate:** The **Apogee** application rate will be based on the vegetative vigor and the size of the tree.

- 1) Assess if trees have low, medium, or high vigor to determine the rate of **Apogee** (see **section VII. Crop-Specific Information**).
- 2) Determine the size of the tree in terms of the amount of water needed for a dilute spray (spray to drip or according to Tree Row Volume).
- 3) Multiply the **Apogee** rate per 100 gallons of dilute spray by the size of the tree in gallons per acre. The result is the number of ounces needed per acre for those trees. Once this application rate is determined in ounces per acre, it can be concentrated into the actual spray volume.

$$\frac{\text{ounces of Apogee}}{100 \text{ gallons of water}} \times \frac{\text{TRV in gallons}}{\text{acre}} = \frac{\text{ounces}}{\text{acre}}$$

**Example calculation:** For a block of apple trees that typically produces 25-32" of shoot growth per year (vigorous growth), the suitable rate would be 2 applications of 6 ounces of **Apogee** per 100 gallons of dilute spray according to **Table 1**. The trees are large and require 300 gallons of water per acre to spray dilute (i.e., spray to drip or to Tree Row Volume).

$$\frac{6 \text{ ounces of Apogee}}{100 \text{ gallons of water}} \times \frac{300 \text{ gallons (TRV)}}{\text{acre}} = \frac{18 \text{ ounces}}{\text{acre}}$$

The rate of **Apogee** may be applied in dilute or concentrated sprays as long as good spray coverage is achieved.

### Aerial Application\*

Apply **Apogee** in a minimum of 10 gallons of spray solution per broadcast acre. Aerial applications generally only provide spray coverage in the top part of the canopy and vegetative growth control will be limited to those areas that receive spray coverage.

\* Not registered for use in California

## Grass Grown for Seed

Apply **Apogee** to actively growing grass plants according to application rates and timing recommended in **Table 5**.

### Suppression of Annual Bluegrass in Washington, Oregon, Idaho and Utah

Annual bluegrass must be sprayed with **Apogee** when in the flowering stage and must receive thorough coverage. Less suppression will result if the annual bluegrass has not reached the flowering stage when sprayed. Some annual bluegrass biotypes may not be affected by the use of **Apogee**.

### Broadcast Ground Application

**Water volume:** Use a minimum of 10 gallons of spray solution per broadcast acre.

### Aerial Application

**Water volume:** Use a minimum of 10 gallons of spray solution per broadcast acre.

## Peanuts

Apply **Apogee® plant growth regulator** to actively growing peanut plants according to the rates recommended in **Table 6**. Make the first application of 7.25 ounces of product per acre when 50% of the stems are touching in the row middle (row closure). Make a second application at 100% row closure, as needed. Under conditions that promote extremely rank growth and prior to loss of visual peanut row pattern in the field, an optional third application may be applied to peanut plants. Do not make more than two (2) applications of **Apogee** in less than six (6) weeks. Plants that are under stress due to lack of moisture, disease pressure, or other stress conditions will show little response to **Apogee** application.

### Broadcast Ground Application

**Water Volume:** Use a minimum of 20 gallons of spray solution per broadcast acre for optimal performance.

## III. Additives

## Apples and Pears

### Adjuvant

Use a standard tree fruit spray adjuvant, preferably a non-ionic surfactant, to improve leaf coverage and performance consistency. Follow the manufacturer's rate recommendations.

### Nitrogen Source (if needed)

If the water source used for spray applications contains high levels of calcium carbonate (hard water), add one pound of ammonium sulfate (AMS) for every pound of **Apogee**. Use high-quality, spray grade AMS to avoid plugging nozzles.

## Grass Grown for Seed

For consistent performance on grass grown for seed, adding a commercial spray adjuvant is recommended, preferably a non-ionic surfactant. A nitrogen source such as 1 quart per acre of 32% UAN or 1 pound per acre of ammonium sulfate may also improve performance. Use high-quality ammonium sulfate (spray grade) to avoid plugging nozzles.

## Peanuts

The uptake of **Apogee** into the peanut plant requires the presence of a nonphytotoxic nitrogen source in the spray solution. Failure to add a nitrogen source to the spray solution will result in unsatisfactory product performance.

### Nitrogen Source

- **Urea ammonium nitrate (UAN):** Use one pint of UAN (commonly referred to as 28%, 30%, or 32% nitrogen solution) per acre.
- **Ammonium sulfate (AMS):** One pound of AMS per acre may be substituted for 1 pint of UAN per acre. Use high-quality AMS (spray grade) to avoid plugging of nozzles. Other sources of nitrogen are not as effective as those mentioned.

### Oil Concentrate

Adding 1 quart of a nonphytotoxic oil concentrate (commonly referred to as crop oil concentrate or COC) per acre to the spray solution will promote consistent performance. Use COC when **Apogee** is applied without a tank mix partner. If **Apogee** is to be tank mixed with a fungicide, the adjuvant recommended on the fungicide label can be used instead of the COC.

Additive	Ground Application
Nitrogen Source	1 pint UAN
Oil Concentrate	1 quart

## IV. Mixing Order

- 1) **Water:** Begin by agitating a thoroughly clean spray tank half full of clean water.
- 2) **Products in PVA bags:** Place any product contained in water-soluble PVA bags into the mixing tank. Wait until all water-soluble PVA bags have fully dissolved and the product is evenly mixed in the spray tank before continuing.
- 3) **Water-dispersible products:** (dry flowables such as **Apogee**, wettable powders, and suspension concentrates)
- 4) **Adjuvants**
- 5) **Water-soluble products**
- 6) **Emulsifiable concentrates**
- 7) **Water-soluble additives:** (AMS when applicable)
- 8) **Remaining quantity water**

Maintain constant agitation during application.

For more information, refer to section **V. General Tank Mixing Information**.

## V. General Tank Mixing Information

### Apples and Pears

Previous experience has shown that **Apogee® plant growth regulator** use by itself does not result in phytotoxicity and that **Apogee** is compatible with many fungicides and insecticides used in apple and pear orchards.

However, all varieties and cultivars have not been tested with possible tank mix combinations. Local conditions can also influence crop tolerance and may not match those under which BASF has conducted testing. Therefore, before using any tank mix, test the combination on a small portion of the crop to be treated to ensure that a phytotoxic response will not occur as a result of applications.

Tank mixes with calcium or boron sprays may result in less growth control from **Apogee**.

Read and follow the applicable **Restrictions and Limitations** and **Directions For Use** on all products involved in tank mixing. The most restrictive labeling applies to tank mixes.

### Peanuts

Previous experience has shown **Apogee** to be compatible with many fungicides and insecticides commonly used in peanuts. A compatibility test should be used to ensure mixing compatibility. Do not tank mix **Apogee** with any application of calcium including gypsum.

### Compatibility Test for Mix Components

Add components in the following sequence using 2 teaspoons for each pound or 1 teaspoon for each pint of recommended label rate per acre.

- 1) **Water:** - For 20 gallons per acre spray volume, use 3.3 cups (800 ml) of water. For other spray volumes, adjust rates accordingly. Use only water from the intended source at the source temperature.
- 2) **Products in PVA bags:** - Cap the jar and invert 10 cycles.
- 3) **Water-dispersible products:** - (dry flowables such as **Apogee**, wettable powders, suspension concentrates, or suspo-emulsions) Cap the jar and invert 10 cycles.
- 4) **Water-soluble products:** - Cap the jar and invert 10 cycles.
- 5) **Emulsifiable concentrates:** - (oil concentrate or methylated seed oil when applicable) Cap the jar and invert 10 cycles.
- 6) **Water-soluble additives:** - (UAN or AMS when applicable) Cap the jar and invert 10 cycles.
- 7) Let the solution stand for 15 minutes.
- 8) **Evaluate** the solution for uniformity and stability. The spray solution should not have free oil on the surface, nor fine particles that precipitate to the bottom, nor thick (clabbered) texture. Do not use any spray solution that could clog spray nozzles.

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## VI. General Restrictions and Limitations

### Apples and Pears

- **Maximum seasonal use rate:** Do not apply more than a **total of 99 ounces** (6.2 pounds) of **Apogee® plant growth regulator** per acre, per season.
- Do not apply more than a **total of 48 ounces** (3 pounds) of **Apogee** within any 21-day interval.
- **Preharvest Interval (PHI):** Do not apply within **45 days** before harvest.
- **Restricted Entry Interval (REI): 12 hours.**
- **Rainfast period: Apogee** is rainfast **8 hours** after application.
- Do not apply to crops that show **injury** (leaf phytotoxicity) produced by any other prior pesticide applications, because this injury may be enhanced or prolonged.
- Do not apply this product through any type of irrigation system.

### Grass Grown for Seed

- Do not apply more than **29 ounces** of **Apogee** per acre per year (0.5 pounds of prohexadione calcium ai per acre).
- Do not apply within **35 days** before harvest.
- Do not graze livestock for **49 days** following application.
- Do not cut forage or hay for livestock feed for **49 days** following application.
- **Rainfast period: Apogee** is rainfast within **1 hour** of application.
- Do not apply this product through any type of irrigation system.
- **Plantback/Rotation Restriction:** If replanting or crop rotation is necessary in treated fields, do not plant any crop other than grass grown for seed for **30 days** following the last application of **Apogee**.

### Peanuts

- **Maximum seasonal use rate:** Do not apply more than a **total of 21.75 ounces** (1.36 pounds) of **Apogee** per acre, per season.
- Do not make more than two (2) applications of **Apogee** in less than six (6) weeks.
- **Preharvest Interval (PHI):** Do not apply within **25 days** of harvest.
- **Restricted Entry Interval (REI): 12 hours.**
- Do not graze or feed treated crops.
- Do not apply **Apogee** by air.
- **Rainfast period: Apogee** is rainfast **8 hours** after application.
- **Stress:** Do not apply to crops under stress due to lack of moisture, hail damage, flooding, herbicide injury, or mechanical injury, as reduced activity may result.
- Do not apply to crops that show **injury** (leaf phytotoxicity or plant stunting) produced by any other prior product applications, because this injury may be enhanced or prolonged.
- Do not apply through any type of **irrigation** equipment.
- This product cannot be used to **formulate** or reformulate any other pesticide product.
- **Plantback/Rotation Restriction:** If replanting or crop rotation is necessary in treated fields, do not plant any crop other than peanuts for **30 days** following the last application of **Apogee**.

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## VII. Crop-Specific Information

### Apples

Make the first application of **Apogee® plant growth regulator** when shoots have 1-3" of new shoot growth. Repeat applications as needed. Refer to **Tables 1-3** for application rates and timings.

Dilute spray volumes are based on the amount of solution required to thoroughly wet the tree foliage to the point of runoff. Consult your local extension agent or consultant for a recommendation to calculate the dilute coverage based on the tree row volume.

Applying **Apogee** may increase fruit set (see **Table 2** and **Thinning** section under **Mode of Action**) by reducing June drop. Therefore, thinning programs may need adjustment when using **Apogee**.

On apple varieties known to be prone to cracking, such as Empire and Stayman, **Apogee** has been associated with an increase in fruit cracking.

**Aerial Applications\*:** Apply **Apogee** in a minimum of 10 gallons of spray solution per broadcast acre. Aerial applications generally only provide spray coverage in the top part of the tree canopy and vegetative growth control will be limited to those areas that receive spray coverage.

\* Not registered for use in California

**Table 1. Recommended Application Rates for Vegetative Growth Control in Apples<sup>1</sup>**

Application Timing	Apogee rate per 100 gallons of dilute spray <sup>1</sup>	Apogee rate per acre <sup>2</sup>	Restrictions
<b>Medium to High Vigor Trees</b> <ul style="list-style-type: none"> <li>• Apply at 1-3" of new shoot growth.</li> <li>• For best results, make subsequent applications at 1-4 week intervals and before or immediately after the shoots show signs of regrowth.</li> </ul>	6 - 12 ounces	18 - 36 ounces	Do not apply more than a <b>total of 48 ounces</b> (3 pounds) of <b>Apogee</b> within any 21-day interval.  Do not apply more than a <b>total of 99 ounces</b> (6.2 pounds) of <b>Apogee</b> per acre, per season.
<b>Low Vigor Trees</b> <ul style="list-style-type: none"> <li>• Apply at 1-3" of new shoot growth.</li> <li>• For best results, make subsequent applications at 1-4 week intervals and before or immediately after the shoots show signs of regrowth.</li> </ul>	3 - 8 ounces	9 - 24 ounces	
<b>Long Growing Season</b> <ul style="list-style-type: none"> <li>• Apply at 1-3" of new shoot growth.</li> <li>• Make second and third applications at 7-14 day intervals.</li> <li>• Make subsequent applications as needed at 10-14 day intervals.</li> </ul>	3 - 8 ounces	9 - 24 ounces	
<sup>1</sup> Refer to section <b>II. Application Instructions</b> for rate calculations. <sup>2</sup> Based on 300 gallons of dilute spray per acre.			

**Table 2. Recommended Application Rates for Special Cases in Apples**

Application Timing	Apogee rate per 100 gallons of dilute spray <sup>1</sup>	Apogee rate per acre <sup>2</sup>
<b>To decrease June drop on trees with light bloom:</b> <ul style="list-style-type: none"> <li>• Apply at 1-3" of new shoot growth.</li> </ul>	10 - 12 ounces	30 - 36 ounces
<b>To shape the canopy:</b> <ul style="list-style-type: none"> <li>• Direct the spray to the portion of the tree where growth control is desired.</li> <li>• Apply at 1-3" of new shoot growth.</li> </ul>	6 - 12 ounces	N/A
<sup>1</sup> Refer to section <b>II. Application Instructions</b> for rate calculations. <sup>2</sup> Based on 300 gallons of dilute spray per acre.		



**Table 3. Recommended Application Rates for Fire Blight Infections of Shoots (Shoot Blight) for Susceptible Apple Varieties\***

Application Timing	Apogee rate per 100 gallons of dilute spray <sup>1</sup>	Apogee rate per acre <sup>2</sup>	Restrictions
<b>To reduce fire blight infections of shoot by decreasing vegetative growth</b> <ul style="list-style-type: none"> <li>Apply at 1-3" of new shoot growth.</li> <li>Make a second application if new shoot growth occurs.</li> </ul>	6 - 12 ounces	18 - 36 ounces	Do not apply more than a <b>total of 48 ounces</b> (3 pounds) of <b>Apogee</b> within any 21-day interval.
<sup>1</sup> Refer to <b>section II. Application Instructions</b> for rate calculations. <sup>2</sup> Based on 300 gallons of dilute spray per acre. <sup>*</sup> Not registered for use in California.			

**Special Directions For Use for Vegetative Growth Control of Apples Grown in Idaho, Washington and Oregon**

Apply **Apogee® plant growth regulator** to actively growing trees according to the tree size, rates and application timings listed in **Table 4**. It is important to take into consideration the size and vigor of the apple tree when determining the spray volume and application frequency, timing and rate required to achieve vegetative growth control. Spray volumes are based on the amount of solution required to thoroughly wet the tree foliage to the point of runoff. Consult your local extension agent or consultant for a recommendation on spray volume.

**Coverage**

Because **Apogee** is absorbed by the leaves, thorough spray coverage of the tree foliage is necessary for good uptake. The spray should be directed to the portion of the tree where growth control is desired. To achieve good coverage, use sufficient water, proper spray pressure, nozzles, nozzle spacing, spray volume per acre, and tractor speed. Consult the spray nozzle and accessory guide for information pertaining to proper equipment calibration.

Aerial application of **Apogee** generally only provides coverage of the top of the tree canopy, and vegetative growth control will be limited to those areas that receive spray coverage.

**Table 4. Recommended Application Rates for Vegetative Growth Control of Apples in Idaho, Oregon or Washington**

Apple Tree Size	Apogee rate per Acre <sup>1</sup>	Application Timing	Restrictions
Eight to ten feet (8-10') tall on dwarf root stocks (Small Trees)	6-12 ounces	Apply at 1-3 inches of new terminal shoot growth.	Do not apply more than a <b>total of 48 ounces</b> (3 pounds) of <b>Apogee</b> within any 21 day interval.  Do not apply more than a <b>total of 99 ounces</b> (6.2 pounds) of <b>Apogee</b> per acre, per season.
Ten to fourteen feet (10-14') tall on semi-dwarf rootstocks (Medium Trees)	6-18 ounces	For best results, make subsequent applications at 1-4 week intervals and when shoots show signs of regrowth.	
Trees taller than fourteen feet (14') on standard non-dwarf rootstocks (Large Trees)	18-24 ounces	Apple trees should be monitored closely for vigor. High vigor trees may require more frequent applications through the growing season.	
<sup>1</sup> Spray volumes must be a minimum of 100 gallons per acre and increase as necessary to achieve thorough canopy coverage.			

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**Grass Grown for Seed**

Refer to **Table 5** for application rates and timing for the use of **Apogee® plant growth regulator** to reduce vegetative growth in grass grown for seed.

**Suppression of Annual Bluegrass in Washington, Oregon, Idaho and Utah**

Annual bluegrass must be sprayed with **Apogee** when in the flowering stage and must receive thorough coverage. Less suppression will result if the annual bluegrass has not reached the flowering stage when sprayed. Some annual bluegrass biotypes may not be affected by the use of **Apogee**.

**Broadcast Ground Application**

**Water Volume:** Use a minimum of 10 gallons of spray solution per broadcast acre.

**Aerial Application**

**Water Volume:** Use a minimum of 10 gallons of spray solution per broadcast acre.

**Table 5. Application Rates for Vegetative Growth in Grass Grown for Seed\***

Application Timing	Apogee rate per acre
<b>Single application:</b> <ul style="list-style-type: none"> <li>• Apply from flag leaf emergence up to early heading growth stage.</li> </ul>	14 - 29 ounces
<b>Split applications:</b> <ul style="list-style-type: none"> <li>• Apply from flag leaf emergence up to early heading stage of growth.</li> <li>• Make a second application 7 - 10 days later when new growth occurs.</li> </ul>	7 - 14 ounces
*Not registered for use in California.	

**Peanuts**

Apply **Apogee** to actively growing peanut plants according to the rates recommended in **Table 6**. Make the first application of 7.25 ounces of product per acre when 50% of the stems are touching in the row middle (row closure). Make a second application at 100% row closure, as needed (Refer to **Table 6**). Under conditions that promote extremely rank growth and prior to loss of visual peanut row pattern in the field, an optional third application may be applied to peanut plants. Do not make more than two (2) applications of **Apogee** in less than six (6) weeks. Plants that are under stress due to lack of moisture, disease pressure, or other stress conditions will show little response to **Apogee** application.

**Broadcast Ground Application**

**Water Volume:** Use a minimum of 20 gallons of spray solution per broadcast acre for optimal performance.

**Table 6. Application Rates\***

Application	Apogee rate per acre	Additive rate per acre
<b>First Application:</b> <ul style="list-style-type: none"> <li>• Apply to peanuts when 50% of stems are touching in row middle (row closure).</li> </ul>	7.25 ounces	1 pint UAN
<b>Second Application:</b> <ul style="list-style-type: none"> <li>• Make a second application at 100% row closure, as needed.</li> </ul>	3.6 - 7.25 ounces	
*Not registered for use in California.		

**Pears**

**Vegetative Growth and Fire Blight Management\*:**

Controlling vegetative growth with **Apogee® plant growth inhibitor** can reduce fire blight infections of pears in two ways. First, applications of **Apogee** have been shown to reduce latent bloom. Pear trees are the most susceptible to fire blight invasion during bloom. Reducing the length of the bloom period can help manage fire blight. Second, trees treated with **Apogee** may be less susceptible to infection of shoots (refer to **Table 7** for application rates). For maximum reduction in fire blight susceptibility, **Apogee** should be applied at least 10 days before weather conditions favorable for shoot and leaf infections occur. **Apogee** should be used as part of a total IPM strategy to control fire blight.

**Effect on fruit set and fruit size:** Be aware that applying **Apogee** may allow the tree to retain more fruit than untreated trees. Increasing the fruit load per tree will reduce the average fruit size. Growers should evaluate this effect in determining whether to use **Apogee**. When using **Apogee**, growers should carefully regulate the fruit load per tree.

**Application Information:** Make the first application when lateral shoots have 1-3" of new shoot growth. Repeat applications as needed. Refer to **Table 7** for application rates.

Dilute spray volumes are based on the amount of solution required to thoroughly wet the tree foliage to the point of runoff. Consult your local extension agent or consultant for recommendation to calculate dilute coverage based on tree row volume.

**Table 7. Application Rates for Vegetative Growth Control and Fire Blight Infections of Shoots (Shoot Blight) in Pears.**

Application Timing	Apogee rate per 100 gallons of dilute spray <sup>1</sup>	Apogee rate per acre <sup>2</sup>
<b>Multiple applications:</b> <ul style="list-style-type: none"> <li>• Apply at 1-3" of new shoot growth.</li> <li>• Make a second application at 10-17 day intervals.</li> <li>• Make subsequent applications as needed at 14-21 day intervals.</li> </ul>	6 ounces	18 ounces
<b>Vegetative growth control and reduced latent bloom (fire blight management):</b> <ul style="list-style-type: none"> <li>• Apply at 1-3" of new shoot growth</li> <li>• Make a second application after 21 days.</li> </ul>	10-12 ounces	30-36 ounces

<sup>1</sup>Refer to section II, **Application Instructions** for rate calculations.  
<sup>2</sup>Based on 300 gallons of dilute spray per acre.  
 \*Not registered for use in California for Fire Blight Management.

<b>Crops:</b>
This product can be used on the following crops:
<b>Apples</b>
<b>Grass Grown for Seed</b>
<b>Peanuts</b>
<b>Pears</b>
Look inside for complete <b>Restrictions and Limitations</b> and <b>Application Instructions</b> .

<b>Conditions of Sale and Warranty</b>
<p>The <b>Directions For Use</b> of this product reflect 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 use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as crop response to the product, 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 BASF or the Seller. All such risks shall be assumed by the Buyer.</p> <p>BASF warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes referred to in the <b>Directions For Use</b>, subject to the inherent risks, referred to above. BASF MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF FITNESS OR MERCHANTABILITY OR ANY OTHER EXPRESS OR IMPLIED WARRANTY. IN NO CASE SHALL BASF OR THE SELLER BE LIABLE FOR CONSEQUENTIAL, SPECIAL OR INDIRECT DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT. BASF and the Seller offer this product, and the Buyer and User accept it, subject to the foregoing <b>Conditions of Sale and Warranty</b> which may be varied only by agreement in writing signed by a duly authorized representative of BASF.</p> <p><i>Apogee is a registered trademark of BASF.</i></p> <p><i>ProVide is a registered trademark of Valent Biosciences Corporation.</i></p> <p><i>Prohexadione calcium is patented by Kumiai Chemical Industry.</i></p> <p style="text-align: right;">© 2003 BASF Corporation All rights reserved 007969-00188.200312-05.NVA 2003-04-080-0193.pdf Supersedes NVA 2003-04-080-0063</p>

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