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pms

400-99

**PRECAUTIONARY STATEMENTS  
HAZARDS TO HUMANS  
CAUTION**

Harmful if absorbed through skin. Avoid contact with skin, eyes or clothing. Do not allow spray solution to touch skin. Wear protective clothing to protect hands, arms and legs, both when diluting and applying this product. Avoid breathing dusts. Wear a protective mask during mixing/loading operations. Wash hands and face thoroughly with soap and water after use or before eating or smoking.

**ENVIRONMENTAL HAZARDS**

Do not apply directly to water or wetlands. Do not discharge into lakes, streams, ponds, or public waters unless in accordance with NPDES permit. For guidance, contact your Regional Office of the EPA. Do not contaminate water by cleaning of equipment or disposal of wastes.

**PHYSICAL OR CHEMICAL HAZARDS**

Do not use or store near heat or open flame.

# ALAR®-85

## A PLANT GROWTH REGULANT

**UNIROYAL**

RECEIVED  
JAN - 8 1987  
EPA Reg. No. 400-99

**DIRECTIONS FOR USE**

Each formulator is responsible for obtaining EPA registrations for its formulated product(s).

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

**COMPOSITION**

Active Ingredient: (% by weight)	
Daminozide[butanedioic acid mono (2,2-dimethylhydrazide)]	85.0%
Inert Ingredients:	15.0%
TOTAL:	100.0%

**REENTRY STATEMENT**

Do not reenter treated areas until 24 hours after application, unless wearing protective clothing.

**STORAGE AND DISPOSAL**

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

**STORAGE** — Store in a dry location.

Use spray and stock solutions within 24 hours. Do not store solutions. Immediate use is appropriate, if another component is added to spray mixture.

**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** — Completely empty bag into application equipment. Then dispose of empty bag in a sanitary landfill or by incineration, or if allowed by State and local authorities, by burning. If burned, stay out of smoke.

**KEEP OUT OF REACH OF CHILDREN**

### CAUTION

**STATEMENT OF PRACTICAL TREATMENT**

**IF SWALLOWED:** Drink promptly a large quantity of milk, egg white or gelatin solution; if not available drink large amounts of water. Avoid alcohol. Call a physician immediately.

**IF ON EYES OR SKIN:** Wash with plenty of water for at least 15 minutes. For eyes, call a physician. Remove and wash contaminated clothing before use.

**IF INHALED:** and abnormal symptoms develop see a physician.

SEE LEFT SIDE PANEL FOR ADDITIONAL PRECAUTIONARY STATEMENT.

**NOT FOR REFORMULATION**

UNIROYAL CHEMICAL COMPANY, INC.

Middlebury, CT 06749

EPA REG. NO. 400-99

EPA EST. NO.

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NET WEIGHT:

11-3-86

Lot No.

**GENERAL INSTRUCTIONS AND PRECAUTIONS**

ALAR-85 is a water soluble plant growth regulant. It is effective in reducing vegetative growth, promoting flower bud initiation, increasing fruit set, controlling time of fruit maturity, preventing preharvest fruit drop, and generally improving market quality of fruit at harvest and/or after storage. See specific crop instructions.

1. ALAR-85 should be applied as a foliar spray in a manner that insures uniform and complete coverage.
2. Since ALAR-85 must be absorbed by the plant to be effective, best performance can be expected with good absorption conditions (a healthy well watered plant and slow drying conditions) and a rain free period of about 6 to 12 hours following application. Concentrate sprays (50 to 100 gals./A) of ALAR-85 may be used.
3. Do not spray ALAR-85 on any low vigor trees or trees under stress as from drought, low fertility, winter injury etc. Such treatment may accentuate reduction in vegetative growth and fruit size. ALAR-85 is most effective when used on healthy vigorously growing plants.
4. On fruit trees the earlier ALAR-85 is applied and the higher the rate used the greater the reduction of both vegetative growth and fruit size. Less reductions will occur on high vigor trees.
5. Spray ALAR-85 only once per year on fruit trees. Split applications are not recommended.
6. ALAR-85 is compatible with most commonly used spray materials. East of the Rockies it is generally recommended as a separate spray. Consult your advisor for local recommendations. Do not tank mix with highly alkaline materials (such as lime) or copper sprays or apply within 28 days (before or after) a copper spray application. Observe all precautions and limitations on labels of all products used. When ALAR-85 is mixed with water for spraying, use the mixture on the same day.
7. Do not graze animals on cover crops grown among sprayed trees.
8. Do not handle treated plants until sprays have dried.

**FOLLOWING SEASON EFFECTS**

ALAR-85 may promote an increase in fruit bud development and set the year following treatment. To maximize this advantage and assure optimum fruit size and quality, improve tree vigor through fertilization, pruning and uniform spray application. If excessive fruit set occurs, follow your normal thinning program. If excessive fruit set occurs accompanied by excessive size reduction, short thickened stems, shallow stem cavities and misshapen fruit, skip a year of ALAR-85 treatment and bring the trees to proper vigor through fertilization, pruning, thinning, etc. Always leave some untreated trees in each orchard for comparison.

**APPLES**

The effect of ALAR-85 will vary depending on time and rate of application. The higher the rate the greater the magnitude of effect during the year of treatment and the higher the possibility for following season effects (See Following Season Effects). Only one ALAR-85 spray may be used on apple trees during a growing season. From the following table select Spray Schedule Timing A "Spring", Timing B "Mid-Season" or Timing C "Summer" and follow down the column for Time and Rate to Apply and Expected Desirable Effects.

APPLE

Spray Schedule	Timing A "Spring"	Timing B "Mid Season"	Timing C "Summer"
<b>Time to Apply</b> General U.S.	10 to 21 days after petal fall when new vegetative growth is about 4-6 inches long	21 days after petal fall to 70 days before harvest	60 to 70 days before normal harvest or approximately half way between full bloom and maturity (see footnote 1)
Northwest U.S.	10 to 14 days after full bloom	14 to 70 days after full bloom	70 to 80 days after full bloom
<b>Rate to Apply</b> relative to Tree Vigor?	lbs/100 gal. <sup>3</sup> lbs/A	lbs/100 gal. <sup>3</sup> lbs/A	lbs/100 gal. <sup>3</sup> lbs/A
Low Vigor	Do not use	Do not use	Do not use
Moderate Vigor	1/4-1                      3-4	1/4                              3	1/2-3/4                      2-3
Good to High Vigor <sup>4</sup>	1/4-1                      3-4	1/4                              3	1/4                              3
Very High Vigor	(See Special Instruction *1)	1/4                              3	1/4                              3
Young Non Bearing Trees	(See Special Instructions *2)		
Heavily Pruned Trees	(See Special Instructions *3)		
<b>Expected Desirable Effects</b>			
1. Maturity delayed <sup>5</sup>	Yes	Yes	Yes
2. Red Color increased	Yes	Yes	Yes
3. Preharvest fruit drop prevented	Yes	Yes	Yes
4. Fruit firmness maintained	Yes	Yes	Yes
5. Handling bruises reduced	Yes	Yes	Yes
6. Scald reduced	Yes	Yes	Yes
7. Water core delayed	Yes	Yes	Yes
8. Fruit cracking reduced	Yes	Yes	Yes
9. Weather check reduced	Yes	Yes	Yes
10. Bitterpit & cork spot reduced	Yes	Yes	Yes
11. Fruit size controlled	Greatest	Moderate	Least
12. Vegetative growth reduced	Greatest	Some to None	None
13. Flower bud initiation promoted, increasing return bloom, set and yield	Greatest	Some to None	Some to None
ALAR-85 maintains or improves quality while preventing drop.	Use this timing where vegetative growth control and increased return bloom are primary objectives.	Effects 11, 12, and 13 will be pronounced with an early mid season ALAR-85 spray and reduced with later applications.	Use this timing where fruit quality and drop control only are primary objectives.

**FOOTNOTES**

- 1. Example. If Red Delicious are 150 days between bloom and maturity the ALAR-85 should be applied about 75 days after full bloom. (75 days before maturity).
- 2. Maintenance of vigorous trees is essential for best results. Annual pruning resulting in removal of weak wood, proper fertilization, and other cultural practices which contribute to high tree vigor should be used. Use leaf analysis services where available to assist in determining degree of tree vigor.
- 3. This dilution rate is based on applications of 400 gallons per acre (to drip point) on mature bearing trees. Most field experience has been with dilute sprays but concentrate sprays can be used if care is taken to get uniform and complete coverage. Do not exceed the per acre recommended rate.
- 4. In areas with short growing seasons treat good to very high vigor trees as moderate.
- 5. The higher rates achieve the longest delays in maturity.

**\*SPECIAL INSTRUCTIONS**

**1. For Very High Vigor Trees:**

Rate: 2 pounds ALAR-85 per 100 gal. of water. (Use 4 to 8 lbs/A.). Rates above 4 lbs/A must only be used when low or no fruit set occurs, such as after a freeze, and when vegetative growth must be held back to assure adequate fruit bud development. Fruit that matures on trees treated above the 4 lb/A rate must not be harvested during that season.

**2. To Bring Young Trees into Bearing and Control Vegetative Growth:**

Rate: 1½ to 2 pounds ALAR-85 per 100 gal. water. (Do not exceed 4 lbs. per acre).  
Time: 10 to 21 days after full bloom when new growth is about 4 to 6 inches long. Spray to drip.

**3. Vegetative Growth Control on Heavily Pruned Trees:**

Rate: 1 to 2 pounds ALAR-85 per 100 gal. water (Do not exceed 4 lbs. per acre).  
Time: When regrowth (terminal or sucker) is about 4 to 6 inches long.  
Use sufficient spray solution to insure uniform and complete coverage. Use this spray where excessive vigor and associated pruning practices make it desirable to control regrowth throughout the entire tree.  
On Heavily Topped Trees — Use 2 to 4 pounds ALAR-85 per 100 gal. water (Do not exceed 4 pounds per acre) and direct the spray to the heavily pruned area in the tops of trees with lighter application on the remainder.

**PEARS**

(WASHINGTON and OREGON Only)

To control premature ripening and aid in preventing preharvest fruit drop:

Rate: 4 pounds ALAR-85 per acre on mature bearing trees.

Time: 18 to 24 days before normal harvest.

Apply in sufficient water to give uniform and complete coverage.

To promote flower bud initiation and control vegetative growth:

Rate: 4 pounds per acre on mature trees.

Time: 7 to 30 days after full bloom.

Apply in sufficient water to give uniform and complete coverage.

To bring trees into bearing:

Rate: 1½ to 2 pounds ALAR-85 per 100 gallons water and spray to drip point.

Time: 7 to 30 days after full bloom.

Apply only one ALAR-85 spray per growing season. NOTE — ALAR-85 will control preharvest fruit drop through 7 to 10 day normal harvest period or about 28 to 35 days after spray application. If it is desired to leave the fruit on the tree for a longer period of time, an additional approved "Stop-drop" material should be applied at the recommended dosage and timing.

**PEACHES AND NECTARINES**

To improve fruit color, concentrate maturity and hasten ripening:

Rate: 4 pounds ALAR-85 per acre on mature bearing trees. Apply in a minimum of 400 gals. per acre.

Time: From early to late pit hardening stage.

Use only once per growing season as a separate dilute spray in a thoroughly cleaned sprayer. Injury may occur as "shotholing" and possibly leaf drop especially on early varieties. Do not spray low vigor trees as fruit size reduction may occur. Do not use ALAR-85 on "Cherokee" or "Arm King" nectarines as it may cause excessive injury on these varieties.

**SOUR CHERRIES**

To improve color, hasten ripening, concentrate maturity, decrease fruit removal force thus reducing shaker damage, prevent late maturity fruit swell and produce a uniform firm cherry for improved pitting and grade. To reduce vegetative growth, lessening wind whip damage and promoting fruit buds and set for the following season.

Rate: 4 to 8 pounds ALAR-85 per acre on mature bearing trees.

Time: Approximately two weeks after full bloom.

Apply in sufficient water to give uniform and complete coverage. Use the higher rate for earliest maturity and on first time sprayed high vigor trees. Use only once per growing season.

**SWEET CHERRIES**

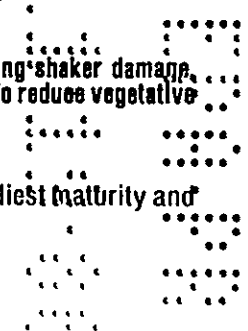
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Rate: 4 to 8 pounds ALAR-85 per acre on mature bearing trees.

Time: Two weeks after full bloom.

Apply in sufficient water to give uniform and complete coverage. Use the higher rate for earliest maturity and on very high vigor trees. Use only once per growing season.

WARNING: Premature "green" drop has been claimed to be sporadically associated with the use of ALAR-85 on sweet cherry trees under apparently unusual and undetermined physiological and/or physical stress conditions.



**TOMATO TRANSPLANTS**  
(Do not use in California)  
For Use Before Transplanting

To retard stem elongation, delay early fruiting and aid in concentrating maturity:

For Field Grown Transplants: Apply once or twice as growth demands.

Rate: 5 pounds ALAR-85 per 100 gallons water.

Time: First spray - when plants are in the 1 to 4 true leaf stage.

Second spray - 2 weeks after first.

Apply to runoff using 25 to 50 gallons per acre.

For Greenhouse Grown Transplants: Apply once or twice as growth demands.

Rate: 2½ pounds per 100 gallons water.

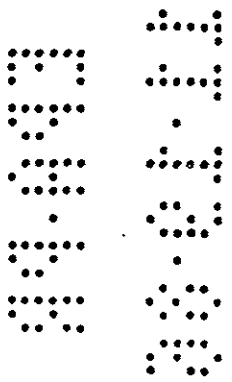
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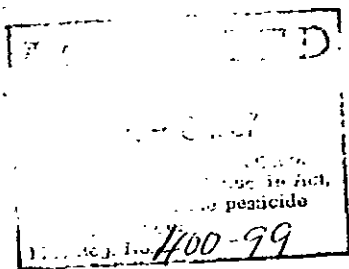
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**CAUTION:** Do not tank mix ALAR-85 with copper sprays, or apply ALAR-85 within 7 days before or after a copper spray application.

**IMPORTANT NOTICE** — Seller warrants that this product conforms to its chemical description and is reasonably fit for the purposes stated on the label when used in accordance with the directions and instructions specified on the label under normal conditions of use, but neither this warranty nor any other warranty of merchantability or fitness for a particular purpose, express or implied, extends to the use of this product, contrary to label instructions, or under abnormal conditions, or under conditions not reasonably foreseeable to seller, and buyer assumes the risk of any such use.





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**TO IMPROVE QUALITY  
INCREASE SET AND YIELD  
CONTROL VEGETATIVE GROWTH**



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1. ALAR-85 coverage.
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ALAR-85 may maximize th fertilization, thinning prog ened stems, s trees to prop each orchard

EPA Reg. No. 400- 99  
UNIROYAL CHEMICAL COMPANY, INC.  
Middlebury, Connecticut 06749

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 Rate: 4 to 8 pounds ALAR-85 per acre on mature bearing trees.  
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 Rate: 5 pounds ALAR-85 per 100 gallons water.  
 Time: First spray - when plants are in the 1 to 4 true leaf stage.  
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 Rate: 2 1/2 pounds per 100 gallons water.  
 Time: First spray - when plants are in the 1 to 4 true leaf stage.  
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**FOOTNOTES**

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Rate: 4 pounds ALAR-85 per acre on mature bearing trees.

Time: 18 to 24 days before normal harvest.

Apply in sufficient water to give uniform and complete coverage.

To promote flower bud initiation and control vegetative growth:

Rate: 4 pounds per acre on mature trees.

Time: 7 to 30 days after full bloom.

Apply in sufficient water to give uniform and complete coverage. Use the higher rate on large and high vigor trees.

To bring trees into bearing:

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Time: 7 to 30 days after full bloom.

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Time: From early to late pit hardening stage.

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**INTERIM USE ADVISORY**

ALAR® HAS RECENTLY BEEN THE SUBJECT OF A COMPREHENSIVE REVIEW BY THE EPA. AS A RESULT OF THAT REVIEW, UNIROYAL HAS INITIATED ADDITIONAL TOXICOLOGY AND MARKET BASKET MONITORING STUDIES. WHILE THESE STUDIES ARE IN PROGRESS, UNIROYAL ADVISES THAT PRUDENT STEPS BE TAKEN TO KEEP EXPOSURE TO A MINIMUM, NAMELY:

FOR APPLES WHICH ARE GROWN SPECIFICALLY FOR PROCESSING INTO SAUCE, ALAR USE IS NOT RECOMMENDED. NEVERTHELESS, IT IS RECOGNIZED THAT TREATED "SORT OUTS" FROM APPLES INTENDED FOR THE FRESH MARKET MIGHT BE PROCESSED.