

62719-292

5/20/2003

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12/99 1/35

MAY 20 2003

A. Sterett Robertson
Regulatory Manager
Regulatory Success-America
Dow AgroSciences LLC
9330 Zionsville Road
Indianapolis, IN 46268

Dear Mr. Robertson:

SUBJECT: Amendment - Incorporate Supplemental Labeling,
Minor Revisions to Label
SUCCESS (A. I. Spinosad)
EPA Registration Number: 62719-292
Your Submission Dated February 12, 2003

The labeling referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended, is acceptable subject to the comments listed below. Two (2) copies of the finished labeling must be submitted prior to releasing the product for shipment. A stamped label is enclosed for your records.

1. Under Aerial Application define "without increased buffers (no spray zones in all directions)." What are the size of the buffers? This must be stated on the label. Alternatively replace this proposed change with the previous approved statement.
2. Referencing the ASAE Standard under Aerial Application is preferred since it provides a much more thorough description of the droplet spectrum than just the medium value however we question how readily accessible such a reference is to aerial applicators in the field. Please comment. Perhaps you can indicate how to access such a reference, like a web address where this information can be obtained.
3. On page twenty-three (23) reinstate the previous PHI of fourteen (14) days for nectarines. The one (1) day PHI was limited to a specific state SLN labels only. Alternatively for a Section 3 amendment you can submit Offer to Pay and Data Matrix forms identifying the data submitted in support of the PHI change from fourteen to one day.

If you have any questions concerning this letter, please feel free to contact me at 703/305-6100.

Sincerely yours,

George T. LaRocca
Product Manager 13
Insecticide Branch
Registration Division 7505C

Success*

EPA Reg. No. 62719-292

Registration Notes:

Source label text based on EPA accepted copy dated July 11, 2002.

Proposed changes by amendment:

1. Changed "waterproof gloves" to "Chemical-resistant gloves made of any waterproof material."
2. Edited table of contents to reflect addition of new crops.
3. Changed Storage and Disposal section.
4. Application, Aerial Application: Revised paragraph.
5. Application, General Directions for Chemigation: Deleted "and must contain Viton or Teflon seals" from the end of the last sentence in number 6 under Specific Equipment Requirements.
6. Edited name of following crops in sale copy, Table of Contents and Directions for Use: cranberry, cucurbits, pome fruits, stone fruits, strawberry, tropical tree fruits.
7. Minor revisions throughout for clarity.

Directions for Use Section: (sections alphabetized based on crop/crop grouping)

8. **Caneberries:** Added section from previously approved supplemental labeling.
9. **Fig:** Added section from previously approved supplemental labeling.
10. **Grape:** Added section from previously approved supplemental labeling.
11. **Herbs:** Added section from previously approved supplemental labeling.
12. **Leafy Vegetables and Leaves of Root and Tuber and Legume Vegetables:** Added following sentence under application rate table – "The use of a penetrating surfactant or oil is critical for optimal control of leafminers."; added "or outdoor transplant bed" to the end of the last bullet point under Restrictions.
13. **Root Vegetables:** Added section from previously approved supplemental labeling.
14. **Stone Fruits:** Changed PHI for nectarines to 1 day from previously approved SLN CA-020010.

*Trademark of Dow AgroSciences LLC

ACCEPTED
with COMMENTS
in EPA Letter Dated

MAY 20 2003

Under the Federal Insecticide,
Fungicide, and Rodenticide Act
as amended, for the pesticide
registered under EPA Reg. No.

62719-292

Success*

EPA Reg. No. 62719-292

Specimen Label Notes

1. Added directions for use on caneberries, fig, grape, herbs, and root vegetables.
2. Changed PHI for nectarines to 1 day.

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Success*

EPA Reg. No. 62719-292

Registration Notes from previous labeling actions:

Final printed labeling based on EPA accepted copy dated July 11, 2002.

Changes by Amendment:

1. Added resistance management information in accordance with PR Notice 2001-5.
2. Removed signal word "Caution" because this product meets the criteria of tox category IV by all routes of exposure and is not required to bear a signal word (Federal Register, Vol. 66, No. 241, pp 64759-64768).
3. Added table of contents.
4. Minor spelling and punctuation corrections throughout.

Directions for Use Section: (sections alphabetized based on crop/crop grouping)

5. **Asparagus:** Added section from previously approved supplemental labeling.
6. **Tree Nuts and Pistachios:** Added tree nuts from previously approved supplemental labeling to existing section for Almonds and Pistachios and changed use heading to Tree Nuts and Pistachios.
7. **Pome Fruit:** Added pears, crabapple, quince, and mayhaw from previously approved supplemental labeling to existing section for Apples and changed use heading to Pome Fruit.
8. **Bushberries:** Added section from previously approved supplemental labeling.
9. **Strawberries:** Added section from previously approved supplemental labeling.
10. **Cranberries:** Added section from previously approved supplemental labeling, including chemigation use.
11. **Fruiting Vegetables:** Added okra from previously approved supplemental labeling to existing section.
12. **Leafy Vegetables:** Added leaves of root and tuber vegetables and leaves of legume vegetables to existing section from previously approved supplemental labeling.
13. **Potatoes and Tuberous and Corm Vegetables:** Added artichoke, sugar beet and garden beet to existing section from previously approved supplemental labeling.
14. **Tropical Tree Fruit:** Added section from previously approved supplemental labeling.

Final printed labeling based on EPA accepted copy dated March 28, 2001.

EPA-accepted (03/28/01) changes by amendment:

1. Environmental Hazards: Amended bee language consistent with PR Notice 2000-XX regarding Bee Precautionary Labeling Statements.
2. Referral statements to Warranty Disclaimer, Inherent Risks of Use and Limitation of Remedies were revised per EPA correspondence from Joanne I. Miller dated August 31, 2000 and Dow AgroSciences response to Donald R. Stubbs dated November 20, 2000.

Source label text based on EPA accepted copy dated March 13, 2000 and non-notification dated 03-17-00.

Final Printed Labeling based on EPA accepted copy dated March 13, 2000. The following changes were included in final printed labeling:

1. Almonds and Pistachios: Added oblique banded leafroller to listed pests.
2. Leafy Vegetables: Added cilantro and turnip greens [from EPA-accepted supplemental labeling for Success dated 01/12/00].

Non-notification: Grasshoppers deleted from cereal grains pest listing on 03-17-00.

Changes by Amendment EPA Accepted March 13, 2000:

General Information:

1. Added section on use of adjuvants to improve coverage and penetration of plant foliage for control of leafminers and thrips and footnoted reference to this section in all crops for which control of thrips is claimed.
2. Added instructions for chemigation (specific to corn and potatoes).
3. Removed acres per gallon column from tables and placed this information in the Mixing section.

The following crop uses added from supplemental labeling:

4. Use in potatoes and Tuberous and Corm Vegetables (from EPA-accepted supplemental labeling for Success dated 05-21-99). Also, added option for application by chemigation.
5. Use in tree farms (from EPA-accepted supplemental labeling for Success dated 09-17-99).
6. Cereal Grains: Added use on wheat [see EPA-accepted copy dated 23Sep99 for Tracer (62719-267)]. Also added barley, buckwheat, rye, oats and triticale [see EPA-accepted supplemental labeling for Tracer (62719-267) dated Jan. 12, 2000].
7. Corn: Added use on field corn, seed corn and popcorn [based on EPA-accepted copy dated Sept. 23, 1999, for Tracer (62719-267)]. Also, added option for application by chemigation.
8. Added pistachios to almond section.

Revisions to Existing Use Directions:

9. Apples: Added thrips, codling moth, and laconobia fruit worm to listed pests.
10. Stone fruit: Added thrips to listed pests.
11. Cole crops: Added turnip greens to crops listing (see EPA-accepted supplemental labeling for Success dated Jan. 12, 2000).
12. Leafy vegetables: (1) Added watercress (see EPA-accepted supplemental labeling for Success dated Jan. 12, 2000) under crops listing, and (2) Added thrips to listed pests.
13. Legume vegetables: (1) Clarified crop listing to include "dried" beans and peas; and (2) Added crops not already listed under this heading (see EPA-accepted supplemental labeling for Success dated Dec. 20, 1999) that includes the following crops: Dried cultivars of *Lupinus* spp., *Phaseolus* spp. and *Pisum* spp., including but not limited to: lupins, kidney bean, lima bean, navy bean, pinto bean, tepary bean, adzuki bean, blackeyed pea, cowpea, crowder pea, chickpea, mungbean, field pea, pigeon pea and lentil.

Other:

14. Label text revised for clarity and consistency.

Final printed labeling based on EPA accepted copy dated September 23, 1999 with conditions of acceptance and Notification coded "T6P / Success / Notif / 12-13-99.

Changes by Notification 12-13-99:

Revised bee hazard statements for use in California. Step 1 is to make this change by notification applicable to orchard applications in the state of California (see "Orchard Applications" section on page 7). Step 2 will be to revise the Environmental Hazards section of the label to make this limitation applicable to all uses of this product. This will be done in a more comprehensive label amendment action to follow.

Final printed labeling based on EPA accepted copy dated September 23, 1999 with the following conditions of acceptance:

1. **Precautionary statements section** deleted Hazards to Humans and Domestic Animals heading.
2. **Environmental Hazards section** revised statement to read "This product is highly toxic to molluscs."

Source label text based on EPA accepted copy dated April 15, 1998.

Label changes by amendment (09-23-99):

Container Label Information

1. Revised Precautionary Statements in accordance with acute toxicity review from Byron T. Backus of Technical Review Branch dated June 24, 1998, in which dermal toxicity was revised from category III to category IV. Acute toxicity for Tracer is now category IV for all routes of exposure.
2. Placement of the KORAC Statement and Signal Word changed in accordance with policy letter from EPA labeling unit dated March 26, 1997
3. U.S. Patent numbers corrected.

Directions for Use

4. New uses added to label:
 - Cucurbit Crops
 - Stone Fruit
 - Succulent Beans and Peas
 - Sweet Corn
5. Minor editing of Directions for Use for consistency and clarity, including:
 - all pest names changed to lower case, except for proper nouns, e.g., "European",
 - standardized rate expressions
 - standardized headings within "Approved Crops" sections
 - standardized order of presentation within "Approved Crops" sections

[Editor's note: Changes to correct u/l case, formatting and spacing not shown by edit marks.]

Final Printed Labeling based on EPA accepted copy (NOR) dated April 15, 1998, with the following conditions of acceptance:

1. Label revised to reflect EPA Reg. No. 62719-292.
2. Text in Environmental Hazards section revised from "this product is toxic to mollusks" to "this product is toxic to aquatic invertebrates".
3. Tables in Directions for Use on Almonds and Citrus changed from "ounces of 2SC" to "Ounces of Product".
4. In the Directions for Use for Cole Crops (Brassica Vegetables) and Fruiting Vegetable Crops, the words "including but not limited to" were deleted.

Labeling for Section 3 Registration.

*Trademark of Dow AgroSciences LLC

(Base label):

(Logo) Dow AgroSciences

Success*

A Naturalyte* insect control product for control or suppression of lepidopterous larvae (worms, caterpillars and peach twig borers), leafminers, and thrips in asparagus, bushberries, caneberries, cereal grains, citrus, cole crops, corn (field corn, sweet corn, popcorn, and corn grown for seed), cranberry, cucurbits, fig, fruiting vegetables (okra, tomatoes, peppers and eggplants), grape, herbs, leafy vegetables, leaves of root and tuber and legume vegetables, pome fruits, potatoes and tuberous and corm vegetables, root vegetables, stone fruits, strawberry, succulent and dry beans and peas, tree farms or plantations, tree nuts and pistachios, and tropical tree fruits.

Group	5	INSECTICIDE
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Active Ingredients:

spinosad (a mixture of spinosyn A and spinosyn D)	22.8%
Inert Ingredients	77.2%
Total	100.0%

Contains 2 pounds of active ingredient per gallon.

U.S. Patent No. 5,362,634 and 5,496,931

Keep Out of Reach of Children

Precautionary Statements

Personal Protective Equipment (PPE)

Applicators and other handlers must wear:

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

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

User Safety Recommendations

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.

Environmental Hazards

This product is toxic to bees exposed to treatment for 3 hours following treatment. Do not apply this pesticide to blooming, pollen-shedding or nectar-producing parts of plants if bees may forage on the plants during this time period. The 3 hour limitation does not apply if the applicator operates in a state with a formal, state-approved bee protection program, and the applicator follows all applicable requirements of the state-approved program designed to ensure that managed bees are not present in the treatment area

during this time period. This product is toxic to aquatic invertebrates. Do not apply directly to water, 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.

Agricultural Use Requirements

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. Refer to label booklet under "Agricultural Use Requirements" in the Directions for Use section for information about this standard.

Refer to label booklet for Directions for Use including Storage and Disposal.

Notice: Read the entire label. Use only according to label directions. **Before using this product, read Warranty Disclaimer, Inherent Risks of Use, and Limitation of Remedies at end of label booklet. If terms are unacceptable, return at once unopened.**

In case of emergency endangering health or the environment involving this product, call 1-800-992-5994. If you wish to obtain additional product information, visit our web site at www.dowagro.com.

Shake Well Before Use -- Avoid Freezing

EPA Reg. No. 62719-292

EPA Est. _____

*Trademark of Dow AgroSciences LLC
Dow AgroSciences LLC • Indianapolis, IN 46268 U.S.A.

Naturalyte* Insect Control

Net Contents ____

(Label booklet cover):

(Logo) Dow AgroSciences

Success*

A Naturalyte* insect control product for control or suppression of lepidopterous larvae (worms, caterpillars and peach twig borers), leafminers, and thrips in asparagus, bushberries, caneberries, cereal grains, citrus, cole crops, corn (field corn, sweet corn, popcorn, and corn grown for seed), cranberry, cucurbits, fig, fruiting vegetables (okra, tomatoes, peppers and eggplants), grape, herbs, leafy vegetables, leaves of root and tuber and legume vegetables, pome fruits, potatoes and tuberous and corm vegetables, root vegetables, stone fruits, strawberry, succulent and dry beans and peas, tree farms or plantations, tree nuts and pistachios, and tropical tree fruits.

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spinosad (a mixture of spinosyn A and spinosyn D)	22.8%
Inert Ingredients	77.2%
Total	100.0%

Contains 2 pounds of active ingredient per gallon.
U.S. Patent No. 5,362,634 and 5,496,931

Keep Out of Reach of Children

Agricultural Use Requirements

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. Refer to label booklet under "Agricultural Use Requirements" in the Directions for Use section for information about this standard.

Refer to inside of label booklet for additional precautionary information including Personal Protective Equipment (PPE) and User Safety Recommendations, and Directions for Use including Storage and Disposal.

Notice: Read the entire label. Use only according to label directions. **Before using this product, read Warranty Disclaimer, Inherent Risks of Use, and Limitation of Remedies at end of label booklet. If terms are unacceptable, return at once unopened.**

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Shake Well Before Use -- Avoid Freezing

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EPA Est. _____

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Naturalyte* Insect Control

Net Contents _____

(Page 1 through end):

Table of Contents	Page
Precautionary Statements	-
Personal Protective Equipment	-
User Safety Recommendations	-
Environmental Hazards	-
Directions for Use	-
Agricultural Use Requirements	-
Storage and Disposal	-
General Information	-
Integrated Pest Management (IPM) Programs	-
Insecticide Resistance Management (IRM)	-
Mixing Directions	-
Application	-
Row Crop Application	-
Orchard Spraying	-
Aerial Application	-
Application by Chemigation	-
Approved Uses (See Specific Section for Complete List of Crops)	-
Asparagus	-
Bushberries	-
Caneberries	-
Cereal Grains	-
Citrus	-
Cole Crops (<i>Brassica</i> Vegetables)	-
Corn (Field Corn, Sweet Corn, Popcorn, and Corn Grown for Seed)	-
Cranberry	-
Cucurbits	-
Fig	-
Fruiting Vegetables and Okra	-
Grape	-
Herbs	-
Leafy Vegetables and Leaves of Root and Tuber and Legume Vegetables	-
Pome Fruits	-
Potatoes and Tuberous and Corm Vegetables	-
Root Vegetables	-
Stone Fruits	-
Strawberry	-
Succulent and Dried Beans and Peas	-
Tree Farms or Plantations	-
Tree Nuts and Pistachios	-
Tropical Tree Fruits	-
Terms and Conditions of Use	-
Warranty Disclaimer	-
Inherent Risks of Use	-
Limitation of Remedies	-

12/35

Precautionary Statements

Personal Protective Equipment (PPE)

Applicators and other handlers must wear:

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

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

User Safety Recommendations

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.

Environmental Hazards

This product is toxic to bees exposed to treatment for 3 hours following treatment. Do not apply this pesticide to blooming, pollen-shedding or nectar-producing parts of plants if bees may forage on the plants during this time period. The 3 hour limitation does not apply if the applicator operates in a state with a formal, state-approved bee protection program, and the applicator follows all applicable requirements of the state-approved program designed to ensure that managed bees are not present in the treatment area during this time period. This product is toxic to aquatic invertebrates. Do not apply directly to water, 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.

Directions for Use

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. Read all Directions for Use carefully before applying.

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.

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

13/35

Storage and Disposal

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

Pesticide Storage: Store in original container only. In case of leak or spill, contain material with absorbent materials and dispose as waste.

Pesticide Disposal: Wastes resulting from the use of this product may be disposed of on site according to label use directions or at an approved waste disposal facility.

Container Disposal: Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

General Information

Success* is a Naturalyte* insect control product for control or suppression of many foliage feeding pests including lepidopterous larvae (worms or caterpillars), thrips, Colorado potato beetles and leafminers infesting labeled crops. This product's active ingredient, spinosad, is biologically derived from the fermentation of *Saccharopolyspora spinosa*, a naturally occurring soil organism. The suspension concentrate of Success should be mixed with water and applied as a foliar spray with aerial or ground equipment equipped for conventional insecticide spraying.

General Use Precautions

Integrated Pest Management (IPM) Programs

Success is recommended for IPM programs in labeled crops. Success should be applied when field scouting indicates target pest densities have reached the economic threshold. Other than reducing the target pest species as a food source, Success does not have a significant impact on certain parasitic insects or the natural predaceous arthropod complex in treated crops, including big-eyed bugs, ladybird beetles, flower bugs, lacewings, minute pirate bugs, damsel bugs, assassin bugs, predatory mites or spiders. The feeding activities of these beneficials will aid in natural control of other insects and reduce the likelihood of secondary pest outbreaks. If Success is tank mixed with any insecticide that reduces its selectivity in preserving beneficial predatory insects, the full benefit of Success in an IPM program may be reduced.

Insecticide Resistance Management (IRM)

Success contains a Group 5 insecticide. Insect/mite biotypes with acquired resistance to Group 5 may eventually dominate the insect/mite population if Group 5 insecticides are used repeatedly in the same field or in successive years as the primary method of control for targeted species. This may result in partial or total loss of control of those species by Success or other Group 5 insecticides. Currently, Success (spinosad) is the only active ingredient classified as a Group 5 insecticide and may be rotated with all other labeled products.

To delay development of insecticide resistance, the following practices are recommended:

- Avoid consecutive use of insecticides with the same mode of action (same insecticide group) on the same insect species.
- Use tank mixtures or premix products containing insecticides with different modes of action (different insecticide groups) provided the products are registered for the intended use.
- Base insecticide use on comprehensive IPM programs.
- Monitor treated insect populations in the field for loss of effectiveness.
- Contact your local extension specialist, certified crop advisor, and or manufacturer for insecticide resistance management and/or IPM recommendations for the specific site and resistant pest problems.
- For further information or to report suspected resistance, you may contact Dow AgroSciences by calling 800-253-3033 or over internet at www.dowagro.com.

Mixing

Always shake well before use. Avoid freezing.

Application Rate Reference Table

Application Rate of Success (fl oz/acre)	Active Ingredient Equivalent (lb a.i./acre)	Acres per Gallon of Success
1.5	0.023	85
3	0.047	43
4	0.062	32
6	0.094	21
8	0.125	16
10	0.156	13

Mixing Success Alone: Fill the spray tank with water to about 1/2 of the required spray volume. Start agitation and add the required amount of Success. Continue agitation while mixing and filling the spray tank to the required spray volume. Maintain sufficient agitation during application to ensure uniformity of the spray mix. Do not allow water or spray mixture to back-siphon into the water source.

Tank Mixing: When tank mixing Success with other materials, a compatibility test (jar test) using relative proportions of the tank mix ingredients should be conducted prior to mixing ingredients in the spray tank. If foliar fertilizers are used, the jar test should be repeated with each batch of fertilizer utilizing the mixing water source. Do not use acidifying buffering agents in tank-mixes with Success. Vigorous, continuous agitation during mixing, filling and throughout application is required for all tank mixes. Sparger pipe agitators generally provide the most effective agitation in spray tanks. To prevent foaming in the spray tank, avoid stirring or splashing air into the spray mixture.

Mixing Order for Tank Mixes: Fill the spray tank with water to 1/4 to 1/3 of the required spray volume. Start agitation. Add different formulation types in the order indicated below, allowing time for complete dispersion and mixing after addition of each product. Allow extra dispersion and mixing time for dry flowable products.

Add different formulation types in the following order:

1. Water dispersible granules
2. Wettable powders
3. Success and other aqueous suspensions

Maintain agitation and fill spray tank to 3/4 of total spray volume. Then add:

4. Emulsifiable concentrates and water-based solutions
5. Spray Adjuvants
6. Foliar Fertilizers

Finish filling the spray tank. Maintain continuous agitation during mixing, final filling and throughout application. If spraying and agitation must be stopped before the spray tank is empty, the materials may settle to the bottom. Settled materials must be resuspended before spraying is resumed. A sparger agitator is particularly useful for this purpose.

Premixing: Dry and flowable formulations may be premixed with water (slurried) and added to the spray tank through a 20-35 mesh screen. This procedure assures good initial dispersion of these formulation types.

Use of Adjuvants: Adjuvants may be used to improve the control of leafminers and thrips in situations where achieving uniform plant coverage is difficult such as closed crop canopy, dense foliage, penetration into waxy leaf surfaces, and when less than optimum application equipment is used.

- Use only adjuvant products labeled for agricultural use and follow directions on the manufacturer's label. A nominal concentration of 1 to 2 qt/100 gal (0.25 to 0.5% v/v) is generally sufficient.
- For leafminers and thrips, emulsified crop oils or methylated crop oil plus organosilicone combination products are recommended.
- When using adjuvants, always conduct a jar test to determine the compatibility of the various components in the spray mixture. Crop safety should be evaluated in a small area of the crop whenever there is a significant change in spray mixture ingredients or source of water for the spray mixture.
- Do not use diesel fuel or pure mineral oil.

Application

Proper application techniques help ensure thorough spray coverage and correct dosage for optimum insect control. The following recommendations are provided for ground and aerial application of Success. Attention should be given to sprayer speed and calibration, wind speed, and foliar canopy to ensure adequate spray coverage.

Row Crop Application

Use calibrated power-operated ground spray equipment capable of providing uniform coverage of the target crop. Orient the boom and nozzles to obtain uniform crop coverage. A minimum of 10 gallons per acre should be utilized, increasing volume with crop size and or pest pressure. Under certain conditions, drop nozzles may be required to obtain complete coverage of plant surfaces. Use hollow cone, disc-core hollow cone or twin jet flat fan nozzles suitable for insecticide spraying. Follow manufacturer's recommendations for ideal nozzle spacing and spray pressure and minimize boom height to optimize uniformity of coverage and maximize deposition (optimize on-target deposition) to reduce drift.

Orchard Spraying

Dilute Spray Application: This application method is based on the premise that all plant parts are thoroughly wetted, to the point of runoff, with spray solution. To determine the number of gallons of dilute spray required per acre, contact your state agricultural experiment station, certified pest control advisor, or extension specialist for assistance.

Concentrate Spray Application: This application method is based on the premise that all the plant parts are uniformly covered with spray solution but not to the point of runoff as with a dilute spray. Instead, a lower spray volume is used to deliver the same application rate per acre as used for the dilute spray.

Aerial Application

Apply in spray volume of 5 or more gallons per acre (10 or more gallons per acre for tree, vines or orchard crops). Nozzle configuration should provide a medium to fine droplet size per ASAE S-572 standard (see USDA-ARS or NAAA handbook). Boom length must be less than 75% of wing or 90% of rotor span and swath adjustment (offset) to compensate for crosswinds. Observe minimum safe application height (under 12 feet for ag canopies). Use GPS equipment, swath markers or flagging to ensure proper application to the target area. The boom nozzle configurations used should be patterned (e.g., at NAAA Fly-In) for both crosswind and near parallel winds. If application is made parallel to the wind direction, swath width should be adjusted downward. Do not apply under completely calm wind conditions without increased buffers (no spray zones in all directions). It is best to apply when wind speed is between 2 - 10 mph. Under conditions of low humidity and high temperatures, adjust spray volume and droplet size upward to compensate for evaporation of spray droplets. Insect control by aerial application may be less than control by ground application because of reduced coverage.

16/35

Application by Chemigation

Success may be applied through properly equipped chemigation systems for insect control in corn, cranberries and potatoes. Follow use directions for these crops in the Approved Uses section of this label. Do not apply Success by chemigation to other labeled crops, except as specified in Dow AgroSciences supplemental labeling or product bulletins.

General Directions for Chemigation:

Success may be applied through overhead sprinkler irrigation systems that will apply water uniformly, including center pivot, lateral move, end tow, side (wheel) roll, traveler, solid set, micro sprinkler, or hand move. Do not apply this product through any other type of irrigation system. Sprinkler systems that deliver a low coefficient of uniformity such as certain water drive units are not recommended.

For continuously moving systems, the mixture containing Success must be injected continuously and uniformly into the irrigation water line as the sprinkler is moving. If continuously moving irrigation equipment is used, apply in no more than 0.25 inch of water. For sprinkler systems that do not move during operation, apply in no more than 0.25 inch of irrigation immediately before the end of the irrigation cycle.

Preparation: The following use directions are to be followed when this product is applied through sprinkler irrigation systems. Thoroughly clean the injection system and tank of any fertilizer or chemical residues, and dispose of the residues according to state and federal laws. Flush the injector with soap or a cleaning agent and water. Determine the amount of Success needed to cover the desired acreage. Mix according to instructions in the Mixing section above. Continually agitate the mixture during mixing and application.

Equipment Calibration: In order to calibrate the irrigation system and injector to apply the mixture containing Success, determine the following: 1) Calculate the number of acres irrigated by the system; 2) Set the irrigation rate and determine the number of minutes for the system to cover the intended treatment area; 3) Calculate the total gallons of insecticide mixture needed to cover the desired acreage. Divide the total gallons of insecticide mixture needed by the number of minutes to cover the treatment area. This value equals the gallons per minute output that the injector must deliver. Convert the gallons per minute to milliliters or ounces per minute. Calibrate the injector pump with the system in operation at the desired irrigation rate. It is suggested that the injector pump be calibrated at least twice before operation, and the system should be monitored during operation.

Operation: Start the water pump and sprinkler, and let the system achieve the desired pressure and speed before starting the injector. Start the injector and calibrate the injector system according to Special Use Precautions. This procedure is necessary to deliver the desired rate per acre in a uniform manner. When the application is finished, allow the entire irrigation and injector system to be thoroughly flushed clean before stopping the system.

Precautions:

- Lack of effectiveness or illegal pesticide residues in the crop can result from non-uniform distribution of treated water.
- If you have questions about calibration, you should contact state extension service specialists, equipment manufacturers or other experts.
- Do not connect an irrigation system used for pesticide application (including greenhouse systems) to a public water system unless the pesticide label-prescribed safety devices for public water systems are in place.
- A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.
- Do not apply when wind speed favors drift beyond the area intended for treatment. End guns must be turned off during the application, if they irrigate nontarget areas.
- Do not allow irrigation water to collect or runoff and pose a hazard to livestock, wells, or adjoining crops.
- Do not enter treated area during the reentry interval specified in the Agricultural Use Requirements section of this label unless required PPE is worn.

17/35

- Do not apply through sprinkler systems that deliver a low coefficient of uniformity such as certain water drive units.

Specific Equipment Requirements:

1. The system must contain a functional check valve, vacuum relief valve, and low-pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from back flow. Refer to the American Society of Agricultural Engineer's Engineering Practice 409 for more information.
2. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
3. The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
4. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
5. The irrigation line or water pump must include a functional pressure switch that will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.
6. Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock. The metering pump must provide a greater pressure than that of the irrigation system at the point of injection. The pump must meet Section 675 for "Electrically Driven or Controlled Irrigation Machines" NEC 70.
7. To insure uniform mixing of the insecticide into the water line, inject the mixture through a nozzle placed in the fertilizer injection port or just ahead of an elbow or tee in the irrigation line so that the turbulence created at those points will assist in mixing. It is suggested that the injection point be higher than the insecticide tank to prevent siphoning.
8. The tank holding the insecticide mixture should be large enough to allow the system to complete a revolution with 1 filling. It should be free of rust, fertilizer, sediment, and foreign material, and equipped with an in-line strainer situated between the tank and the injector pump.

Approved Uses

**Asparagus
(Post Harvest Protection of Ferns Only)**

Pest and Application Rates:

Pest	Application Rate	
	Active Ingredient (lb/acre)	Success (fl oz/acre)
asparagus beetle	0.062 - 0.094	4 - 6

Specific Use Directions:

Application Timing: For determining when to treat, scout with enough regularity to monitor the population size of the labeled pest. Make applications **only to asparagus ferns**. Treat when pests appear, targeting eggs at hatch or small larvae. Consult your Dow AgroSciences representative, extension specialist, certified crop advisor or your state agricultural experiment station for any additional local use recommendations for your area.

Application Rate: Apply Success as a foliar spray at the rate indicated to control asparagus beetle in asparagus fern. Use a higher rate in the rate range for heavy infestations or advanced growth stages of

18/35

the beetle. Heavy infestations may require repeat applications, but follow resistance management guidelines.

Resistance Management: For resistance management purposes, do not apply more than 3 times in any 30-day period. Rotate to a different class of insect control products or use no treatment for the next 30 days. Do not make more than 3 applications per crop.

Restrictions:

- Do not apply more than a total of 18 fl oz of Success (0.28 lb a.i. of spinosad) per acre per crop.
- **Preharvest Interval:** This use is only for asparagus ferns; do not apply within 60 days of spear harvest.
- Do not feed treated ferns to meat or dairy animals.

Bushberries

(Insect Suppression)

Including, but not limited to: Blueberry, Currant, Gooseberry, Huckleberry, Elderberry, Juneberry, Lingonberry, Salal

Pests and Application Rates:

Pests	Success (fl oz/acre)
armyworms cherry fruitworm cranberry fruitworm currant fruitfly fireworms leafrollers loopers thrips	4 - 6

Specific Use Directions:

Application Timing: Treat when pests appear, targeting eggs at hatch or small larvae. Heavy infestations may require repeat applications but follow resistance management guidelines. Consult your Dow AgroSciences representative, extension service specialist, certified crop advisor or your state agricultural experiment station for any additional local use recommendations for your area.

Application Rate: The amount of Success per acre will depend on plant size and volume of foliage present and pest pressure. Choose a lower rate for light infestations and/or small plants and a higher rate for heavy infestations and/or larger plants.

Resistance Management: Do not apply Success more than 3 times in any 30 day period. Whenever Success is applied 3 times in succession, this should be followed by no use of Success for a 30 day period or rotation to another insecticide class.

Restrictions:

- Do not apply more than a total of 29 fl oz of Success (0.45 lb a.i. of spinosad) per acre per crop or make more than 6 applications per calendar year.
- **Preharvest Interval:** Do not apply within 3 days of harvest.
- **Treatment Interval:** Do not make applications less than 6 days apart.

19/35

Caneberries

Including, but not limited to: Blackberry, Loganberry, Red and Black Raspberry, and Cultivars and/or Hybrids of These

Pests and Application Rates:

Pests	Success (fl oz/acre)
beet armyworm	4 - 6
bertha armyworm	
green fruitworm	
leafrollers	
looper	
sawfly	
western raspberry	
fruitworm	

Specific Use Directions:

Application Timing: Treat when pests appear, targeting eggs at hatch or small larvae. Use a higher rate in the rate range for larger larvae or moderate to severe infestations and/or larger plant volume. Heavy infestations may require repeat applications but follow resistance management guidelines. Consult your Dow AgroSciences representative, extension service specialist, certified crop advisor or your state agricultural experiment station for any additional local use recommendations for your area.

Resistance Management: Do not apply Success more than 3 times in any 30 day period. Whenever Success is applied 3 times in succession, this should be followed by no use of Success for a 30 day period or rotation to another insecticide class.

Restrictions:

- Do not apply more than a total of 29 fl oz of Success (0.45 lb a.i. of spinosad) per acre per crop or make more than 6 applications per calendar year.
- Preharvest Interval:** Do not apply within 1 day of harvest.
- Treatment Interval:** Do not make applications less than 5 days apart

Cereal Grains

Including: Barley, Buckwheat, Oats, Rye, Triticale, Wheat

Pests and Application Rates:

Pests	Success (fl oz/acre)
cereal leaf beetle	2 - 6
armyworms	3 - 6

Specific Use Directions:

Application Timing: Scout for **armyworms** with enough regularity to monitor egg laying and egg hatch and treat when thresholds are reached. Applications of Success perform best when timed to coincide with peak egg hatch and/or small larval stage of growth of each generation.

Application Rate: Apply as a foliar spray at the rate indicated for target pest. Use a higher rate in the rate range for heavy infestations, advanced growth stages of target pests, or difficult spray coverage situations.

Restrictions:

- Do not apply more than 19 fl oz of Success (0.28 lb a.i. of spinosad) per acre per year.

20/35

- **Preharvest Interval:** Do not apply within 21 days of grain or straw harvest or within 14 days of forage or hay harvest.

Citrus

Including, but not limited to: Grapefruit, Lemons, Limes, Oranges, Tangerines

Pests and Application Rates:

Pests	Success (fl oz/acre)
citrus thrips [†] katydids ^{††} lepidoptera larvae: avocado leafroller citrus peelminer cutworms fruit tree leafroller orange tortrix western tussock moth	4 - 10

[†]Control of thrips may be improved by addition of an adjuvant to the spray mixture. See Use of Adjuvants section under Mixing.

^{††}Katydid: Control of small nymphs only, suppression only of adults.

Specific Use Directions:

Application Timing: Treat when pests appear or in accordance with local economic thresholds. Consult your Dow AgroSciences representative, extension service specialist, certified crop advisor or your state agricultural experiment station for any additional local use recommendations for your area.

Application Rate: The rate per acre of Success will depend on tree size and pest pressure. Use a lower rate for light infestations and/or small trees and a higher rate for heavy infestations and/or large trees.

Resistance Management: Citrus thrips are present most of the time on the crop during the growing season and have demonstrated a high potential to develop resistance to insect control products. In order to delay resistance development in thrips, do not apply Success more than 2 times per year. If additional treatments are required, rotate to another class of products for the next 30 days or 2 sprays, whichever is longest. For resistance management purposes, do not apply to citrus nurseries or citrus in greenhouses.

Restrictions:

- Do not apply more than a total of 29 fl oz of Success (0.45 lb a.i. of spinosad) per acre per crop.
- **Preharvest Interval:** Do not apply within 1 day of harvest.

Cole Crops (*Brassica* Vegetables)

Including, but not limited to: Broccoli, Broccoli Raab, Brussels Sprouts, Cabbage, Chinese Broccoli, Chinese Cabbage (Bok Choy), Chinese Cabbage (Napa), Chinese Mustard Cabbage (Gai Choy), Cauliflower, Cavalo, Collards, Kale, Kohlrabi, Mizuna, Mustard Greens, Mustard Spinach, Rape Greens, Turnip Greens

2/1/35

Pests and Application Rates:

Pests	Success (fl oz/acre)
diamondback moth	1.5 - 4
cabbage looper imported cabbageworm	3 - 6
armyworms (including beet armyworm) leafminers † thrips †	4 - 10

†Control of leafminers and thrips may be improved by addition of an adjuvant to the spray mixture. See Use of Adjuvants section under Mixing.

Specific Use Directions:

Application Timing: Treat when pests appear, targeting eggs at hatch or small larvae. Heavy infestations may require repeat applications, but follow resistance management guidelines. Consult your Dow AgroSciences representative, extension service specialist, certified crop advisor or your state agricultural experiment station for any additional local use recommendations for your area.

Application Rate: Apply as a foliar spray at the rate indicated for target pest. Use a higher rate in the rate range for heavy infestations or advanced growth stages of target pests.

Resistance Management: Do not apply Success to successive generations of insects. Do not apply more than 3 times to any single generation or within any 30 day period. After use of Success (once or up to 3 times) in a 30-day period, rotate to another class or use no insecticide for the next 30 days. Use this calendar or window approach for the entire farm and consider area wide programs if other growers are in close proximity. Do not make more than 6 applications of Success per calendar year for diamondback moth on a farm.

Restrictions:

- Do not apply more than a total of 29 fl oz of Success (0.45 lb a.i. of spinosad) per acre per crop.
- **Preharvest Interval:** Do not apply within 1 day of harvest.
- Do not apply to seedling cole crops grown for transplant.

Corn (Field Corn, Sweet Corn, Popcorn, and Corn Grown for Seed)

Pests and Application Rates:

Pests	Success (fl oz/acre)
armyworms corn earworm European corn borer southwestern corn borer western bean cutworm	3 - 6

Specific Use Directions:

Application Timing: Scout for European corn borer and armyworms with enough regularity to monitor egg laying and egg hatch. Applications of Success should be timed to coincide with peak egg hatch of each generation. Frequent treatments may be necessary when crop is growing rapidly, during silking or under heavy pest pressure.

Application Rate: Apply as a foliar spray at the rate indicated for target pest. Use a higher rate in the rate

range for heavy infestations or advanced growth stages of target pests.

Spray Delivery: For control of first generation European corn borer and armyworms, apply broadcast or as a directed spray into the leaf whorls. For control of corn earworm, apply broadcast or direct spray to ear zone. Use sufficient spray volume and nozzle pressure to ensure thorough wetting of the silks.

Chemigation: Success may be applied to corn by **chemigation** at labeled rates. Refer to the Application by Chemigation section for application guidelines for chemigation.

Restrictions:

Sweet Corn, Popcorn, Corn Grown for Seed

- Do not apply more than 29 fl oz of Success (0.45 lb a.i. of spinosad) per acre per year.
- **Preharvest Interval:** Do not apply within 1 day of grains harvest or 7 days of forage harvest.

Field Corn

- Do not apply more than 12 fl oz of Success (0.188 lb a.i. of spinosad) per acre per year.
- **Preharvest Interval:** Do not apply within 28 days of grain or fodder harvest or within 7 days of forage harvest.

Cranberry

(Insect Suppression)

Pests and Application Rates:

Pests	Rate of Success	
	Broadcast (fl oz/acre)	Dilute Spray (fl oz/100 gal)
armyworms	4 - 10	1 - 2.5
currant fruitfly		
fireworms		
leafrollers		
loopers		
sparganothis fruitworm		
thrips		

Specific Use Directions:

Application Timing: For determining when to treat, scout with enough regularity to monitor the population size of each of the labeled pests. Treat when pests appear, targeting eggs at hatch or small larvae. Consult your Dow AgroSciences representative, extension specialist, certified crop advisor or your state agricultural experiment station for any additional local use recommendations for your area.

Application Rate: Application rate within the rate range will depend on plant size and volume of foliage present and pest pressure. Use a higher rate in the rate range for larger larvae or moderate to severe infestations and and/or larger plant volume.

Coverage of Dilute Sprays: Dilute sprays should be uniformly applied to point of runoff. The rate per 100 gallons of spray is based on a spray volume of 400 gallons per acre. Gallonage of dilute sprays will vary depending on plant size and density.

Chemigation: Success may be applied to corn by **chemigation** at labeled rates. Refer to the Application by Chemigation section for application guidelines for chemigation.

23/35

Restrictions:

- Do not apply more than a total of 29 fl oz of Success (0.45 lb a.i. of spinosad) per acre per crop or make more than 6 applications per calendar year.
- **Preharvest Interval:** Do not apply within 21 days of harvest.
- **Treatment Interval:** Do not make applications less than 7 days apart.

Cucurbits

Including, but not limited to: **Cucumber, Edible Gourds, Muskmelons (Cantaloupe, Honeydew, etc.), Pumpkin, Summer Squash, Watermelon, Winter Squash**

Pests and Application Rates:

Pests	Success (fl oz/acre)
armyworms cabbage looper melon worm pickleworm rindworms	4 - 8
leafminers † thrips †	6 - 8

†Control of leafminers and thrips may be improved by addition of an adjuvant to the spray mixture. See Use of Adjuvants section under Mixing.

Specific Use Directions:

Application Timing: Use Success at the dosages indicated by application as a foliar spray. Heavy infestations may require repeat applications, but make no more than 6 applications per crop. Treat when pests appear, targeting eggs at hatch or small larvae. Consult your Dow AgroSciences representative, extension service specialist, certified crop advisor or your state agricultural experiment station for any additional area use recommendations for your area.

Application Rate: Apply as a foliar spray at the rate indicated for target pest. Use a higher rate in the rate range for heavy infestations or advanced growth stages of target pests.

Resistance Management: Leafminers and thrips have demonstrated the ability to develop resistance to numerous classes of products. Because leafminer and thrips generations overlap, rotate insecticides for leafminers and thrips and never apply more than 2 consecutive applications of a single insecticide with the same mode of action.

Restrictions:

- Do not apply more than 29 fl oz of Success (0.45 lb a.i. of spinosad) per acre per season.
- **Preharvest Interval:** Do not apply within 3 days of harvest for all crops except cucumbers. Do not apply within 1 day of harvest for cucumbers.

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Pest and Application Rates:

Pest	Rate of Success	
	(fl oz/acre)	Dilute Spray (fl oz/100 gal)
navel orangeworm	4 - 10	1.0 - 2.5

Specific Use Directions:

Application Timing: Apply Success as a foliar spray when pests appear or in accordance with local conditions. Apply as a concentrate or dilute spray using conventional, power operated spray equipment (see Orchard Spraying section under Application section). Consult your Dow AgroSciences representative, extension service specialist, certified crop advisor or your state agricultural experiment station for any additional local use recommendations for your area.

Application Rate: The rate per acre of Success will depend on tree size and volume of foliage present and pest pressure. Choose a higher rate for large trees or heavy infestations.

Spray Volume: Dilute sprays are sprayed to the point of runoff. The application rate range for dilute sprays in the table is based on a spray volume of 400 gallons per acre. Gallonage of dilute sprays will vary depending on tree size, density of canopy, stage of seasonal growth, and spacing in the orchard.

Resistance Management: Although navel orange worm has not had major resistance problems, it is recommended to avoid applying Success against more than 2 generations per year.

Restrictions:

- Do not apply more than a total of 29 fl oz of Success (0.45 lb a.i. of spinosad) per acre per crop.
- **Preharvest Interval:** Do not apply within 7 days of harvest.

Fruiting Vegetables and Okra

Including, but not limited to: Eggplant, Ground Cherry, Okra, Pepino, Pepper, Tomatillo, Tomato

Pests and Application Rates:

Pests	Success (fl oz/acre)
Colorado potato beetle European corn borer hornworms loopers tomato fruitworm	3 - 6
armyworms (including beet armyworm) flower thrips † thrips palmi † tomato pinworm	4 - 8
leafminers † (<i>Liriomyza</i> spp.)	6 - 10

†Control of leafminers and thrips may be improved by addition of an adjuvant to the spray mixture. See Use of Adjuvants section under Mixing.

Specific Use Directions:

Application Timing: Scout weekly throughout the season to monitor and track populations of leafminers and thrips to determine when economic thresholds are exceeded. Scout weekly throughout the season to monitor and track pest and beneficial populations. For tracking **lepidopterous larvae**, scout with enough regularity to monitor the population size of each of the labeled pests. Applications of Success should be timed to coincide with peak egg hatch in species without overlapping generations. Consult current pest management recommendations for specific guidelines.

Application Rate: Apply as a foliar spray at the rate indicated for target pest. Use a higher rate in the rate range for heavy infestations or advanced growth stages of target pests.

Resistance Management: For resistance management, do not apply more than 3 times in any 21 day period. Rotate to a different class of insect control products or use no treatment for the next 21 days.

Restrictions:

- Do not apply more than 29 fl oz of Success (0.45 lb a.i. of spinosad) per acre per crop.
- **Preharvest Interval:** Do not apply within 1 day of harvest.
- Do not apply to seedling fruiting vegetables grown for transplant within a greenhouse or shade house.

Grape

Pests and Application Rates:

Pests	Success (fl oz/acre)
cutworm grape leaf folder grape leaf skeletonizer omnivorous leafroller orange tortrix thrips	4 - 8

Specific Use Directions: Equipment and spray volume should be carefully adjusted to assure thorough uniform coverage of infested parts of the crop.

Application Timing: Treat when pests appear, targeting eggs at hatch or small larvae. Use a higher rate in the rate range for larger larvae or moderate to severe infestations and/or larger plant volume. Heavy infestations may require repeat applications but follow resistance management guidelines. Consult your Dow AgroSciences representative, extension service specialist, certified crop advisor or your state agricultural experiment station for any additional local use recommendations for your area.

Resistance Management: Do not apply Success more than 3 times in any 30 day period. Whenever Success is applied 3 times in succession, this should be followed by no use of Success for a 30 day period or rotation to another insecticide class.

Restrictions:

- Do not apply more than a total of 29 fl oz of Success (0.45 lb a.i. of spinosad) per acre per crop.
- The maximum seasonal application rate east of the Rocky Mountains is 0.36 lb a.i. per acre.
- **Preharvest Interval:** Do not apply within 7 days of harvest.
- **Treatment Interval:** Do not make applications less than 5 days apart.

Herbs

Including, but not limited to: Angelica, Balm, Basil, Borage, Burnet, Camomile, Catnip, Chervil (Dried), Chive, Chive (Chinese), Clary, Coriander (Leaf), Costmary, Cilantro (Leaf), Curry (Leaf), Dillweed, Horehound, Hyssop, Lavender, Lemongrass, Lovage (Leaf), Marigold, Marjoram, Nasturtium, Parsley (Dried), Pennyroyal, Rosemary, Rue, Sage, Savory (Summer and Winter), Sweet Bay, Tansy, Tarragon, Thyme, Wintergreen, Woodruff, Wormwood

26/35

Pests and Application Rates:

Pests	Success (fl oz/acre)
armyworms loopers	4 - 6

† Use the higher end of the rate range for larger larvae or high infestations.

Specific Use Directions:

Application Timing: For determining when to treat, scout with enough regularity to monitor the population size of each of the labeled pests. Treat when pests appear, targeting eggs at hatch or small larvae. Consult your Dow AgroSciences representative, extension specialist, certified crop advisor or your state agricultural experiment station for any additional local use recommendations for your area.

Application Rate: Apply Success as a foliar spray at the rate indicated to control target pests. Heavy infestations may require repeat applications, but follow resistance management guidelines.

Resistance Management: For resistance management purposes, do not apply more than 3 times in any 30-day period. Rotate to a different class of insect control products or use no treatment for the next 30 days. Do not make more than 4 applications per crop.

Restrictions:

- Do not apply more than 5 applications per crop or a total of 30 fl oz of Success (0.47 lb a.i. of spinosad) per acre per crop.
- **Preharvest Interval:** Do not apply within 1 days of harvest.

Leafy Vegetables and Leaves of Root and Tuber and Legume Vegetables

Including, but not limited to: Arugula, Beets, Celery, Chervil, Cilantro, Corn Salad, Cress, Dandelion, Dock, Edible Chrysanthemum, Endive, Fennel, Garden Peas, Head Lettuce, Leaf Lettuce, Parsley, Purslane, Radicchio, Rhubarb, Spinach, Swiss Chard, Turnip Greens, Water Cress

Pests and Application Rates:

Pests	Success (fl oz/acre)
diamondback moth	1.5 - 3
cabbage looper imported cabbage worm	3 - 6
armyworms (including beet armyworm)	4 - 8
leafminers † thrips ††	6 - 10

† The use of a penetrating surfactant or oil is critical for optimal control of leafminers.

†† Control of thrips may be improved by addition of an adjuvant to the spray mixture. See Use of Adjuvants section under Mixing.

Specific Use Directions:

Application Timing: Scout at least weekly and consider the impact of both pests and beneficials. Treat when economic thresholds are exceeded, targeting eggs at hatch or small larvae. Heavy infestations may require repeat applications, but follow resistance management guidelines. Consult your Dow AgroSciences representative, extension service specialist, certified crop advisor or your state agricultural experiment station for any additional local use recommendations for your area.

Application Rate: Apply as a foliar spray at the rate indicated for target pest. Use a higher rate in the rate range for heavy infestations or advanced growth stages of target pests.

Resistance Management: For resistance management, do not apply more than 3 times in any 21 day period. Rotate to a different class of insect control products or use no treatment for the next 21 days. Do not apply more than 6 treatments per crop. If Success is applied 3 times in succession, do not apply again for at least 21 days.

Restrictions:

- Do not apply more than 29 fl oz of Success (0.45 lb a.i. of spinosad) per acre per crop.
- **Preharvest Intervals:**
 - Leafy greens:** Do not apply within 1 day of harvest.
 - Leaves of Root, Tuber and Legume Vegetables:** Do not apply within 3 days of harvest.
- Do not apply to seedling leafy crops grown for transplant within a greenhouse, shade house or outdoor transplant bed.

Pome Fruits

Including, but not limited to: Apples, Crabapple, Mayhaw, Pears, Quince

Pests and Application Rates:

Pests	Rate of Success	
	(fl oz/acre)	Dilute Spray (fl oz/100 gal)
leafminers † spotted tentiform western tentiform	4 - 10	1.3 - 3.3
codling moth laconobia fruitworm leafrollers oblique-banded pandemis thrips †	6 - 10	2 - 3.3

†Control of leafminers and thrips may be improved by addition of an adjuvant to the spray mixture. See Use of Adjuvants section under Mixing.

Specific Use Directions:

Application Timing: Optimal timing for **leafminers** and **leafrollers** may vary between species and geographic location. For **leafminers**, monitor the moth flights and infestation densities of both the sap-feeding and tissue-feeding stage. For optimum control, treat at first appearance of leaf mining activity. For **leafrollers**, monitor the moth flights and the infestation densities of the larval stages. Repeat application as necessary to maintain control. **Codling moth** treatments should closely follow regional spray recommendations based on biofix dates and pheromone trap catches. **Codling moth** larvae must be controlled before they penetrate the fruit. **Codling moth** applications will provide control for no more than 10 days. Repeat application as necessary to maintain control. Consult with your Dow AgroSciences representative, state agricultural experiment station, certified pest control advisor or extension specialist for specific application timings in your area.

Application Rate: The amount of Success per acre will depend on tree size and pest pressure. Choose lower rates for light infestations and/or small trees and the higher rates for heavy infestations and/or larger trees.

Spray Volume: Dilute sprays are sprayed to the point of runoff. The application rate range in the table is based on a spray volume of 300 gallons per acre. Gallonage of dilute sprays will vary depending on tree

28/35

size, density of canopy, stage of seasonal growth, and spacing in the orchard.

Resistance Management: Leafrollers have demonstrated the ability to develop resistance to many insect control products. Rotate to products with different modes of action after applying Success against 2 consecutive generations of insects. Do not apply more than 3 sprays targeted at leafrollers per season.

Restrictions:

- Do not apply more than a total of 29 fl oz of Success (0.45 lb a.i. of spinosad) per acre per crop.
- **Preharvest Interval:** Do not apply within 7 days of harvest.

Potatoes and Tuberous and Corm Vegetables

Including, but not limited to: Artichoke, Cassava, Chayote Root, Chinese Artichoke, Garden Beet, Ginger, Jerusalem Artichoke, Potatoes, Sugar Beet, Sweet Potatoes, Tumeric, Yams

Pests and Application Rates:

Pests	Success (fl oz/acre)
Colorado potato beetle European corn borer	3 - 6
armyworms artichoke plume moth dipteran leafminers (<i>Liriomyza</i>) loopers thrips †	4.5 - 6

†Control of thrips may be improved by addition of an adjuvant to the spray mixture. See Use of Adjuvants section under Mixing.

Specific Use Directions:

Application Timing: Treat when pests appear, targeting eggs at hatch or small larvae. When plants are growing rapidly, repeat applications may be necessary to protect new foliage. Consult your Dow AgroSciences representative, extension service specialist, certified crop advisor or your state agricultural experiment station for any additional local use recommendations for your area.

Application Rate: Apply as a foliar spray at the rate indicated for target pest. Use a higher rate in the rate range for heavy infestations or advanced growth stages of target pests. Heavy infestations may require repeat applications but follow resistance management guidelines.

Chemigation: Success may be applied to potatoes by **chemigation** at labeled rates. Refer to the Application by Chemigation section for application guidelines for chemigation.

Resistance Management: Do not apply to consecutive generations of Colorado potato beetle and do not make more than 2 applications per single generation of Colorado potato beetle. Do not apply more than 3 times in any 30-day period. Rotate to a different class of insect control product or use no treatments for the next 30 days.

Restrictions:

- Do not make applications less than 7 days apart or apply more than 4 times per crop.
- Do not apply more than a total of 21 fl oz of Success (22.5 fl oz for artichoke) (0.33 lb a.i. of spinosad) per crop.

29/35

Preharvest Intervals:

- Artichoke:** Do not apply within 2 days of harvest.
- Sugar and Garden Beets:** Do not apply within 3 days of harvest.
- All others:** Do not apply within 7 days of harvest.

Root Vegetables

Including, but not limited to: Black Salsify, Carrot, Celeriac, Chicory, Edible Burdock, Ginseng, Horseradish, Parsnip, Radish, Oriental Radish, Rutabaga, Salsify, Skirret, Spanish Salsify, Turnip, Turnip-Rooted Chervil, Turnip-Rooted Parsley

Pests and Application Rates:

Crops	Pests	Success (fl oz/acre)	Specific Use Restrictions
black salsify carrot chicory ginseng horseradish parsnip salsify skirret Spanish salsify turnip-rooted chervil turnip-rooted parsley	armyworms dipteran leafminers European corn borer fleabeetle loopers thrips [†]	3 - 6	<ul style="list-style-type: none"> Do not apply more than a total of 21 fl oz of Success (0.33 lb a.i. of spinosad) per acre per crop or make more than 4 applications per calendar year.
celeriace edible burdock Oriental radish radish rutabaga turnip			<ul style="list-style-type: none"> Do not apply more than a total of 18 fl oz of Success (0.28 lb a.i. of spinosad) per acre per crop or make more than 3 applications per calendar year.

[†]Control of thrips may be improved with the addition of an adjuvant to the spray mixture. See Use of Adjuvants section under Mixing.

Specific Use Directions:

Application Timing: For determining when to treat, scout with enough regularity to monitor the population size of each of the labeled pests. Treat when pests appear, targeting eggs at hatch or small larvae. Consult your Dow AgroSciences representative, extension specialist, certified crop advisor or your state agricultural experiment station for any additional local use recommendations for your area.

Application Rate: Apply as a foliar spray at the rate indicated for target pest. Use a higher rate in specified rate range for larger larvae or heavier infestations.

Restrictions:

- Preharvest Interval:** Do not apply within 3 days of harvest.
- Treatment Interval:** Do not make applications less than 5 days apart.

Stone Fruits

Including, but not limited to: Apricots, Cherries, Nectarines, Peaches, Plums, Prunes

Pests and Application Rates:

Pests	Rate of Success	
	(fl oz/acre)	Dilute Spray (fl oz/100 gal)
cherry fruit fly	4 - 8	1 - 2
green fruitworm		
leafminers (such as spotted tentiform western tentiform) †		
leafrollers (such as oblique-banded fruit tree pandemis redbanded variegated)		
Oriental fruit moth		
peach twig borer		
thrips †		
western cherry fruit fly		

† Control of leafminers and thrips may be improved by addition of an adjuvant to the spray mixture. See Use of Adjuvants section under Mixing.

Specific Use Directions:

Application Timing: Peach twig borer applications can be made dormant, delayed dormant or as summer sprays. Optimal timing for leafminers and leafrollers may vary between species and geographic location. For leafminers, monitor the moth flights and infestation densities of both the sap-feeding and tissue-feeding stage, but for optimal control, treat before significant tissue-feeding mines are observed. For leafrollers, monitor the moth flights and the infestation densities of the larval stages. Repeat application as necessary to maintain control and ensure thorough coverage for optimal control. For oriental fruit moth, no more than 10 days of residual control can be expected. If longer residual is required, make a second application of Success or other insecticide labeled for oriental fruit moth. Consult with your Dow AgroSciences representative, state agricultural experiment station, certified pest control advisor or extension specialist for specific application timings in your area.

Application Rate: Choose a higher rate in the rate range for large trees, heavy infestations, or advanced growth stages of target pest, especially if spray volume or coverage is marginal.

Spray Volume: Dilute sprays are sprayed to the point of runoff. The application rate range in the table is based on a spray volume of 300 gallons per acre. Gallonage of dilute sprays will vary depending on tree size, density of canopy, stage of seasonal growth, and spacing in the orchard.

Restrictions:

- Do not apply more than 29 fl oz of Success (0.45 lb a.i. of spinosad) per acre per year.
- **Preharvest Interval:** Do not apply within 7 days of harvest for cherries, plums, and prunes, within 14 days of harvest for peaches and apricots, or within 1 day of harvest for nectarines.

Strawberry

Pests and Application Rates:

Pests	Success (fl oz/acre)
armyworms, including beet armyworms leafrollers thrips	4 - 6

Specific Use Directions:

Application Timing: Treat when pests appear, targeting eggs at hatch or small larvae. Consult your Dow AgroSciences representative, extension service specialist, certified crop advisor or your state agricultural experiment station for any additional local use recommendations for your area.

Application Rate: Use Success Naturalyte insect control at the dosages indicated by application as a foliar spray to control target pests. Use a higher rate in the specified range for larger larvae or moderate to severe pest infestations. Heavy infestations may require repeat applications but follow resistance management guidelines.

Resistance Management: Rotate to a different class of insect control products after 2 successive applications of Success. Do not make more than 5 applications per year.

Restrictions:

- Do not apply more than a total of 29 fl oz of Success (0.45 lb a.i. of spinosad) per acre per crop.
- **Preharvest Interval:** Do not apply within 1 day of harvest.

Succulent and Dried Beans and Peas

Including, but not limited to: Adzuki Bean, Blackeyed Pea, Chickpea, Cowpea, Crowder Pea, Edible-Pod Pea, English Pea, Fava Bean, Field Bean, Field Pea, Garbanzo Bean, Garden Pea, Green Pea, Kidney Bean, Lentil, Lima Bean, Lupins, Mungbean, Navy Bean, Pigeon Pea, Pinto Bean, Runner Bean, Snap Bean, Snow Pea, Sugar Snap Pea Tepary Bean, Wax Bean, Yardlong Bean

Pests and Application Rates:

Pests	Success (fl oz/acre)
European corn borer (eggs and larvae)	3 - 6
armyworms corn earworm loopers	4 - 6
leafminers [†] thrips [†]	4.5 - 6

[†]Control of leafminers and thrips may be improved by addition of an adjuvant to the spray mixture. See Use of Adjuvants section under Mixing.

Specific Use Directions:

Application Timing: For determining when to treat, scout with enough regularity to monitor the population size of each of the labeled pests. Heavy infestations may require repeat applications, but make no more than 6 applications per crop. Treat when pests appear, targeting eggs at hatch or small larvae. For European corn borer, initiate when moth flights first appear and use the lower end of the rate range to

control eggs and larvae every 3 days before they enter the plant. Consult your Dow AgroSciences representative, extension service specialist, certified crop advisor or your state agricultural experiment station for any additional recommendations for your area.

Application Rate: Apply as a foliar spray at the rate indicated for target pest. Use a higher rate in the rate range for heavy infestations or advanced growth stages of target pests.

Resistance Management: Leafminers and thrips have demonstrated the ability to develop resistance to numerous classes of products. Because leafminer and thrips generations overlap, rotate leafminer and thrips insecticides and never apply more than 2 consecutive applications targeted against leafminers or thrips of a single compound including Success or compounds with the same mode of action.

Restrictions:

Succulent Beans and Peas:

- Do not apply more than 29 fl oz of Success (0.45 lb a.i. of spinosad) per acre per season.
- **Preharvest Interval:** Do not apply within 3 days of harvest.

Dried Beans and Peas:

- Do not apply more than 12 fl oz of Success (0.188 lb a.i. of spinosad) per acre per season.
- **Preharvest Interval:** Do not apply within 28 days of harvest.
- Do not feed forage or hay to meat or dairy animals.

Tree Farms or Plantations

Conifers, Including Christmas Trees, and Deciduous Trees

Pests and Application Rates:

Pests	Success (fl oz/acre)
lepidopterous larvae, such as: bagworm fall webworm gypsy moth hemlock looper jackpine budworm pine tip moth redhumped caterpillar spruce budworm tent caterpillar tussock moths sawfly larvae, such as: European pine pear redheaded pine	2 - 8

Specific Use Directions:

Application Timing: Time applications to reach larvae when small or just hatching. Repeat application as necessary to maintain control. Consult with your Dow AgroSciences representative, state agricultural experiment station, certified pest control advisor or extension specialist for information on application timing for specific pests in your area.

Application Rates: The rate of Success per acre will depend on tree size and severity of infestation. Use a higher rate in the rate range for large trees or heavy infestations. Apply in sufficient volume to ensure thorough coverage.

Restrictions: Do not apply more than 29 fl oz of Success (0.45 lb a.i. of spinosad) per acre per year.

Tree Nuts and Pistachios

Including, but not limited to: Almonds, Cashew, Chestnut, Filbert (Hazelnut), Macadamia Nut, Pecan Pistachios, Walnut

Pests and Application Rates:

Pests	Rate of Success	
	(fl oz/acre)	Dilute Spray (fl oz/100 gal)
codling moth	4 - 10	1.0 - 2.5
fall webworm		
filbert worm		
hickory shuckworm		
navel orange worm		
oblique banded leafroller		
peach twig borer		
pecan nut casebearer		
redhumped caterpillar		
walnut caterpillar		
walnut husk fly		

Specific Use Directions:

Application Timing: Apply Success as either a dormant or a foliar spray when pests appear or in accordance with local conditions. Apply as a concentrate or dilute spray using conventional, power operated spray equipment (see Orchard Spraying section under Application). Consult your Dow AgroSciences representative, extension service specialist, certified crop advisor or your state agricultural experiment station for any additional local use recommendations for your area.

Use of Crop Oils: Crop oils labeled for agricultural use may be added to the dormant spray solution for suppression of overwintering mites and scale insects. Consult specific oil labels and University of California recommendations for precautions and restrictions regarding the use of oils in nut and fruit trees.

Application Rate: The rate per acre of Success will depend on tree size and volume of foliage present and pest pressure. Choose a higher rate for large trees or heavy infestations.

Spray Volume: Dilute sprays are sprayed to the point of runoff. The application rate range in the table is based on a spray volume of 400 gallons per acre. Gallonage of dilute sprays will vary depending on tree size, density of canopy, stage of seasonal growth, and spacing in the orchard.

Restrictions:

- Do not apply more than a total of 29 fl oz of Success (0.45 lb a.i. of spinosad) per acre per crop.
- **Preharvest Interval:** Do not apply within 14 days of harvest.
- **Treatment Interval:** Do not apply treatments less than 7 days apart.

Tropical Tree Fruits

(Insect Suppression)

Including, but not limited to: Acerola, Atemoya, Avocado, Biriba, Black Sapote, Canistel, Cherimoya, Custard Apple, Feijoa, Guava, Ilama, Jaboticaba, Longan, Lychee, Mamey Sapote, Mango, Papaya, Passionfruit, Pulasan, Rambutan, Sapodilla, Soursop, Spanish Lime, Star Apple, Starfruit, Sugar Apple, Ti Palm Leaves, Wax Jambu, White Sapote

Pests and Application Rates:

Pests	Success (fl oz/acre)
katydids lepidopterous larvae avocado leafroller citrus peelminer cutworms fruit tree leafroller naval orange worm orange tortrix western tussock moth thrips	4 - 10

Specific Use Directions:

Application Rate: The amount of Success per acre will depend on tree size and pest pressure. Choose a lower rate for light infestations and/or small trees and a higher rate for heavy infestations and/or large trees.

Application Timing: Treat when pests appear or in accordance with local economic thresholds. Consult your Dow AgroSciences representative, extension service specialist, certified crop advisor or your state agricultural experiment station for any additional local use recommendations for your area.

Restrictions: In order to prevent or delay resistance development in thrips, do not apply Success more than 2 times per year.

- For resistance management purposes, do not apply to nurseries or in greenhouses.
- Do not apply more than a total of 29 fl oz of Success (0.45 lb a.i. of spinosad) per acre per crop.
- **Preharvest Interval:** Do not apply within 1 day of harvest.

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35/35

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