Iowa FFA Floriculture Career Development Event
2015 Written Exam

1. Texture in an arrangement refers to:
    A) The shape or silhouette of the design
    B) The surface appearance of the arrangement
    C) The visual path the eye follows when viewing the arrangement
    D) The blending of components of an arrangement

2. Chemicals that enter the plant sap and move throughout the entire plant are:
    A) Systemic poisons
    B) Stomach poisons
    C) Fumigants
    D) Contact poisons

3. A number 9 florist ribbon is:
    A) 7/8" wide
    B) 1 3/8" wide
    C) 2" wide
    D) 2 ¾" wide

4. Which of the following is not a tropical flower?
    A) Bird of paradise
    B) Ginger
    C) Alstroemeria
    D) Anthurium

5. What would a saddle be used for in the floral industry?
    A) Casket spray
    B) Corsage
    C) Wedding bouquet
    D) Cake topper

6. What month does Grandparents Day occur during?
    A) February
    B) April
    C) August
    D) September

7. Which of the following are complimentary colors?
    A) Green and blue
    B) Red and yellow
    C) Orange and yellow
    D) Purple and yellow

8. Which type of balance is the simplest to recognize and create?
    A) Symmetrical
    B) Asymmetrical
    C) Radial
    D) Open

9. The most common way to propagate roses is by _____.
    A) Tip Cuttings
    B) Budding
    C) Grafting
    D) Seed

10. _____ is the ribbon size typically used for corsage work.
    A) #3
    B) #9
    C) #16
    D) #40

11. When making hand-tied bouquets, the stems should be positioned:
    A) Parallel to each other
    B) Perpendicular to each other
    C) Any way that looks nice and holds together
    D) In a spiraling manner

12. Commercial flower crops are sometimes watered to cause leaching. This means:
    A) Watering to spread fertilizer nutrients more evenly throughout the plant root system
    B) Watering to remove excess soluble salts from the growing medium
    C) Watering only to wet the top 1/3 of the growing medium
    D) Watering by subsurface methods

13. This is a three color scheme composed of any hue, plus the two hues adjacent to its compliment?
    A) Alternate
    B) Double Compliment
    C) Split Complimentary
    D) Tetrad

14. Which of the following is a line flower?
    A) Bird of paradise
    B) Gladiolus
    C) Rose
    D) Gerbera Daisy

15. The average humidity recommended for interior plants is:
    A) 70 to 100%
    B) 40 to 70%
    C) 20 to 40%
    D) 10 to 20%

16. High style designs are _____ arrangements that emphasize shapes, angles, and clean lines.
    A) Symmetrical
    B) Radical
    C) Asymmetrical
    D) Open

17. Which two days are considered the busiest floral holidays?
    A) Easter and Valentine's Day
    B) Valentine's Day and Christmas
    C) Mother's Day and Easter
    D) Valentine's Day and Mother's Day

18. Which of these foliage's has a woody stem?
    A) Myrtle
    B) Leather leaf
    C) Equisetum
    D) Carnation

19. Of the following, which gauge of wire has the thinnest diameter?
    A) 18
    B) 22
    C) 24
    D) 36

20. The pistil is the female part of the flower. Which of these is not part of the pistil?
    A) Filament
    B) Style
    C) Ovary
    D) Stigma

21. A container often used at Thanksgiving for floral arrangements and symbolic of a plentiful harvest is the:
    A) Bud vase
    B) Cornucopia
    C) Hanukkah
    D) Basket

22. Gloxinia and African Violet are members of the plant family:
    A) Fabaceae
    B) Gesneriaceae
    C) Asteraceae
    D) Caryophyllacea

23. The main reason many tropical foliage plants decline indoors is related to:
    A) Humidity
    B) Air circulation
    C) Temperature
    D) Light

24. Light energy, carbon dioxide, and water enter into the process of photosynthesis, through which:
    A) Respiration results
    B) Carbohydrates are formed
    C) Chlorophyll is formed
    D) Amino acids are formed

25. A hue with white added is:
    A) Tint
    B) Tone
    C) Chroma
    D) Accent

2015 Iowa FFA Floriculture Test
Key

1. B
2. A
3. B
4. C
5. A
6. D
7. D
8. A
9. C
10. A
11. D
12. B
13. C
14. B
15. B
16. C
17. D
18. A
19. D
20. A
21. B
22. B
23. D
24. B
25. A

2015 Iowa Floriculture CDE

Phase IV Floriculture Production

1. You are preparing 2 planters for a customer. The customer tells you that the planters will be placed on either side of the garage doors. The house and garage are just newly built on a bare lot. The garage faces south. Which flower should not be used in these planters?
    a. Petunia
    b. Impatiens
    c. Madagascar Periwinkle
    d. Geranium

2. You have been using a 20-10-20 fertilizer in your greenhouse at 250 parts per million. You notice that the new leaves on some of your flowers are light green to yellowish except for the veins, which are darker green. Which one of the statements below likely explains what you are seeing?
    a. You fertilizing with too much nitrogen
    b. It appears to be a phosphorus deficiency
    c. The potassium rate is too high causing a nitrogen deficiency
    d. The pH of the soil is too high and causing a iron deficiency
    e. All of the above are likely causes

3. If you wanted to develop a new color a flower, which propagation method would be most successful?
    a. Seed
    b. Vegetative cuttings
    c. Layering
    d. Division

4. You are a large wholesale grower of potted plants, especially Easter Lilies, Poinsettias, Azaleas and Mums. All of these specialty crops have environmental factors that must be met to have the plant flower or “color up”. Which statement reflects the factors that cause each to flower properly:
    a. Azalea and Easter Lily flowering are controlled by temperature (a cooling period); Poinsettias and Mums are controlled by light (short days).
    b. All 4 will flower with normal temperatures and are photo neutral.
    c. Poinsettias and Easter Lilies flower in response to short nights; Mums and Azaleas require a cooling period
    d. Poinsettias and Mums require short days; Azaleas and Easter Lilies require long days

5. You notice that the terminal ends of several plants have many tiny green bug like creatures moving around. You try to get them to fly away, but they can’t because you discover they have no wings. What insect are you dealing with?
    a. Scales
    b. Aphids
    c. White Flies
    d. Slugs or snails

6. If you were to order more of the item on the table, you would be ordering:
    a. 54 cell insert
    b. 3 packs
    c. 1803 insert
    d. 3 inch square inserts

7. You have a propagation bed where you start your poinsettia cuttings. It has a mister that sprays water at regular intervals. The bench also has bottom heat. Which soil media would work best?
    a. Perlite
    b. Sphagnum peat moss
    c. Garden soil
    d. Vermiculite

8. Your goal when growing your wave petunia baskets (10 inch baskets) is to have nice full baskets. What practice will be most helpful in making sure the center of the basket will be full?
    a. Plant 8 to 10 plants per basket
    b. Fertilize heavily with nitrogen
    c. Pinch off the ends of all of the runners as the runner gets about 3 inches over the edge of the pot
    d. Limit water early in their growth and then water heavily in the 2 weeks before you want to sell the plants.

9. The specimen is suffering from:
    a. Leaf Miner
    b. Mealy Bugs
    c. Snails or slugs
    d. White Flies

10. You have tested your potting medium and determined that the pH of the medium is 7.9. When you read the literature on the crops that you want to grow, you learn that the desired pH is 5.8. What would be your best option to correct the pH of the medium?
    a. Add limestone
    b. Run a lot of water through the soil to wash out the extra pH
    c. Apply extra fertilizer
    d. Apply sulfur

1. B
2. D
3. A
4. A
5. B
6. C
7. A
8. C
9. A
10. D

2015 Iowa FFA Floriculture CDE

Phase V: Pesticide Use and Application

1) Which of the following signal words is used for pesticides that are the most toxic?
    a) Caution
    b) Danger
    c) Warning
    d) Extreme

2) Which part of the body has the highest dermal absorption rate?
    a) Forehead and scalp
    b) Hands
    c) Abdomen
    d) Genital area

3) The most commonly reported effect associated with pesticide exposure is:
    a) Dermatitis
    b) Shortness of breath
    c) Dizziness
    d) Fatigue

4) Which of the following is NOT a part of Integrated Pest Management (IPM)?
    a) Pesticides are only used when there is an economic return.
    b) Use of pesticides is based on scouting information.
    c) Pesticides are most effective when used as soon as pests are detected.
    d) Pest populations are managed but not necessarily eradicated.

5) Which of the following pesticide formulations will dissolve completely in water?
    a) Emulsifiable concentrate
    b) Wettable powder
    c) Flowables
    d) Water-dispersable granules

6) REI as related to pesticide use is an acronym for:
    a) Restricted Entry Interval
    b) Resistant Endemic Insect
    c) Repeated Entomology Incident
    d) None of the above

The following questions are based on the Imidan Insecticide label.

7) PPE for applying this chemical as a spray includes all the following except:
    a) Chemical-resistant apron
    b) Long pants and long-sleeved shirt
    c) Chemical resistant headgear
    d) Respirator

8) What type of pesticide formulation is Imidan insecticide?
    a) Soluble powder
    b) Emulsifiable concentrate
    c) Dry flowable
    d) Wettable powder

9) When spraying Imidan on ornamental plants to control Mealy Bugs, how much product would be used for a 250 gallon mixture?
    a) 1.5 lb.
    b) 2.0 lb.
    c) 2.75 lb.
    d) 3.0 lb.

10) The signal word for Imidan Insecticide is:
    a) Caution
    b) Warning
    c) Poison
    d) Danger

Phase V: Pesticide Use and Application Key

1. B
2. D
3. A
4. C
5. A
6. A
7. D
8. A
9. B
10. B

2015 Iowa FFA Floriculture CDE

Phase VI Problem Solving

Name: _____ Contestant # _____

Chapter _____

You have 25 minutes to complete the Problem Solving Practicum. Circle the best answer for each question. Each question is worth 10 points.

1. You decided to take out a loan to open a small floral shop in your community. You borrowed enough money to cover rent, utilities, floral supplies, plant materials, an advertising for one year. The cost of the loan is $43,000. In the first year of business you have $52,000 in gross sales and $38,000 in total expenses. If you have similar profits in future years of business, approximately how many years will it take to pay off your loan? (First, assume that any interest you owe on the loan is already figured into your total expenses, and second, use 100% of the net income toward loan payment.)

    a. 4.25 years
    b. 3.1 years
    c. 31 years
    d. 1 year

2. Your horticulture class has produced 2,000 geraniums in 4" square pots for a spring plant sale. Your class set the selling price at $1.50 each. How many of the plants must be sold to reach your breakeven price?

    Here is what you need to know

    - Each pot holds 60 in^3 of potting soil
    - A bag of soil contains 17,280 in^3 of potting soil and sells for $22.00
    - The actual pot cost is $0.06 each
    - The geranium cuttings were $0.73 each

    a. 973 plants
    b. 1,076 plants
    c. 1,156 plants
    d. 1,530 plants

3. You own a greenhouse that is 96’ in length and 36’ wide. The greenhouse has on each side 3’ wide benches that extend the entire 96’ length of the greenhouse. There are also 3 benches that are 6’ wide but are 3’ short at each end (90’ in length) to allow entrance to the greenhouse. There are 4 aisles that are 4’ wide. What percentage of the space under cover is actually available for production?

    a. 45%
    b. 51%
    c. 63%
    d. 58%

4. If the germination percentage for a package of begonia seed is 80%, how many seeds must be planted to obtain 15,000 seedlings?

    a. 18,000
    b. 18,750
    c. 12,000
    d. 17,256

5. You need 9500 6” pot stakes for your greenhouse operation. You need to request a purchase order from the school office. Using the carts found in the order catalog, determine your expense to obtain the needed 9500 stakes. Do not forget tax and shipping. Tax for the product should be calculated at 6%.
    a. $463.09
    b. $521.40
    c. $547.89
    d. $603.35

Polystyrene pot stakes					
Item	Sz.	Pkg	1-4	5-9	10+
PS4	4”	1000	$46.49	$43.49	$41.99
PS6	6”	1000	$59.99	$57.99	$49.99
PS8	8”	500	$39.99	$37.99	$36.49

Shipping and Handling	
Total Product Value Before Tax	Shipping/Handling Cost
$0-250	$10.00
$251-500	$18.00
$501+	$25.00

Phase VI Problem Solving Key

1. B
2. C
3. C
4. B
5. C

State Floriculture Team Event 2015

It is a hot summer day in June in Longbottom, Georgia. You and your co-workers are having a strangely busy day so far in your small town flower shop, Accio Flowers. Customers are not only coming in, but calling left and right. You receive a call from a local gal you all know very well. She has four orders to place. One of them is being delivered, while the rest will be picked up.

The one needing delivered is:

- A one sided vase arrangement with a sympathy card on it, and a bow with the script reading "friend."

The rest are:

- A three carnation bud vase with a filler flower and a bow.
- A wrapped presentation bouquet
- An arrangement with a keepsake in it and a design style of your choosing. The keepsake arrangement needs a happy birthday card on it as well.

The family will be at the funeral home soon, and the gal will be in to pick up her arrangements in 40 minutes. You all must work together to complete the order in time, good luck!

2015 State Floriculture Event

Making a Corsage Practicum

Corsage Practicum Price Sheet WHOLESALE costs

Item	Single Unit (Wholesale Cost)
Mini Roses	$1.20
Mini Carnations/per bloom	$0.75
Gerbera Daisys/per bloom	$1.20
Leather Leaf/per stem	$0.25
Babies Breath/per stem	$0.75
Silk Leaves each	$0.15
Ribbon/per yard	$0.10
Wire/per stem	$0.02
Floral Tape (for total amount used)	$0.25
Corsage Pins each	$0.05
Corsage Bag each	$0.05

Imidan® 70-w

Agricultural Insecticide

(Water Soluble Bags)

ACTIVE INGREDIENT: Phosmet	**% By Wt.**
N-(Mercaptomethyl) phthalimide, S-(O,O-dimethyl phosphorodithioate	70.0%
OTHER INGREDIENTS:	30.0%
TOTAL	100.0%

KEEP OUT OF REACH OF CHILDREN

WARNING-AVISO

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

FIRST AID **ORGANOPHOSPHATE**	
If inhaled	• Move person to fresh air. • If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. • Call a poison control center or doctor for further treatment advice.
If on skin or clothing	• Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15-20 minutes. • Call a poison control center or doctor for treatment advice.
If in eyes	• Hold eye open and rinse slowly and gently with water for 15-20 minutes. • Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. • Call a poison control center or doctor for treatment advice.
If swallowed	• Call a poison control center or doctor immediately for treatment advice. • Have person sip a glass of water if able to swallow. • Do not induce vomiting unless told to do so by the poison control center or doctor • Do not give anything by mouth to an unconscious person.
HOT LINE NUMBER	
Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-888-478-0798 for emergency medical treatment information.	
NOTE TO PHYSICIAN	
This product is an organophosphate insecticide. If symptoms of cholinesterase inhibition are present, atropine sulfate by injection is antidotal. 2-PAM is also antidotal and may be administered, but only in conjunction with atropine.	

PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS AND DOMESTIC ANIMALS
WARNING-AVISO

May be fatal if swallowed, inhaled, or absorbed through the skin. Do not breathe dust or spray mist. Do not get in eyes, on skin, or on clothing.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Some materials that are chemical-resistant to this product are Barrier Laminate and Viton. If you want more options, follow the instructions for category H on an EPA chemical-resistance category selection chart.

Mixers, loaders, all other applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Socks and shoes
- Chemical-resistant gloves for mixers and loaders, applicators using hand held equipment
- Chemical resistant apron for mixers and loaders
- Chemical-Resistant headgear for overhead exposure.

NET CONTENTS _____ POUNDS

Gowan
The GoTo Company

EPA Reg. No. 10163-169
EPA Est. No. 67545-AZ-1

Produced For:
Gowan Company
P.O. Box 5569
Yuma, AZ 85366-5569

Applicators performing pine seedling dipping must wear:

- Coveralls over long-sleeved shirt and long pants
- Chemical-resistant gloves
- Chemical-resistant footwear plus socks
- Chemical-resistant apron
- A respirator with an organic-vapor removing cartridge with a prefilter approved for pesticides (MSHA/NIOSH approval number prefix TC-23C), or a canister approved for pesticides (MSHA/NIOSH approval number prefix TC-14G), or a NIOSH-approved respirator with an organic vapor (OV) cartridge or canister with any N, R or P or He prefilter.

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry. Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them.

USER SAFETY RECOMMENDATIONS

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Users should remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

ENGINEERING CONTROLS

Water-soluble packets when used correctly qualify as a closed mixing/loading system under the Worker Protection Standard for Agricultural Pesticides [40CFR 170.240(d)(4)].

Mixers and loaders using water-soluble packets must wear:

- Personal Protective Equipment identified above is required for mixers/loaders
- Be provided and must have immediately available for use in an emergency, such as a broken package, spill, or equipment breakdown:
    1. Coveralls
    2. Chemical-resistant footwear
    3. A respirator with an organic-vapor removing cartridge with a prefilter approved for pesticides (MSHA/NIOSH approval number prefix TC-23C), or a canister approved for pesticides (MSMH/NIOSH approval number prefix TC-14G), or a NIOSH-approved respirator with an organic vapor (OV) cartridge or canister with any N, R or P or He prefilter.

Pilots must use an enclosed cockpit in a manner than meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40CFR 170.240(d)(6)].

Airblast, flaggers, and motorized groundboom applicators must in be in fully enclosed cabs or, if not in fully enclosed cabs, applicators must wear double-layer clothing, chemical-resistant headgear, respirator, and chemical-resistant footwear and socks.

Applicators using airblast equipment and flaggers supporting aerial applications must wear:

- Personal Protective Equipment identified above is required for airblast applicators and flaggers.
- Be provided and must have immediately available for use in an emergency when they must exit the cab in the treated area:
    1. Coveralls
    2. Chemical-resistant gloves
    3. Chemical-resistant footwear
    4. Chemical-resistant headgear if overhead exposure

Take off any PPE that was worn in the treated area before reentering the cab; and store all such PPE in a chemical-resistant container, such as a plastic bag, to prevent contamination of the inside of the cab.

ENVIRONMENTAL HAZARDS

This chemical can contaminate surface water through aerial and ground spray applications. Under some conditions, it may also have a high potential for runoff into surface water after application. These include poorly draining or wet soils with readily visible slopes toward adjacent surface waters, frequently flooded areas, areas overlaying extremely shallow ground water, areas with in-field canals or ditches that drain to surface water, areas not separated from adjacent surface waters with vegetated filter strips, and areas overlaying tile drainage systems that drain to surface water. Limit spray drift.

This pesticide is toxic to fish and aquatic invertebrates. Do not apply directly to water or to areas where surface water is present or to intertidal areas below the mean high-water mark. Drift and runoff may be hazardous to aquatic organisms in neighboring areas. Do not contaminate water when disposing of equipment washwater or rinsate.

This product is highly toxic to bees exposed directly to treatment of residues on crops. Do not apply this product or allow it to drift to blooming crops or weeds if bees are visiting the treatment area. Protective information may be obtained from your cooperative Agricultural Extension Service.

USE PRECAUTIONS

Read all precautions and directions before using. Apply this product only as specified on this label.

Imidan 70-W is compatible with most commonly used insecticides and fungicides, but is incompatible with alkaline materials such as spray lime, lime sulfur, and Bordeaux mixtures. These materials will reduce the insecticidal activity of Imidan 70-W.

Insecticidal activity may also be reduced when the spray solution has a pH of 6 or higher. The pH of the spray solution must be corrected by the addition of a suitable buffering or acidifying agent for optimum insecticidal activity.

SPRAY DRIFT MANAGEMENT

Avoiding spray drift is the responsibility of the applicator. The interaction of many equipment and weather-related factors determine the potential for spray drift. The applicator is responsible for considering all these factors when making decisions.

For ground boom applications:

Apply with nozzle height no more than 2 feet above the ground or crop canopy, and when the wind speed is 10 mph or less at the application site as measured by an anemometer. Use a coarse or coarser spray (ASAE definition 572) for standard nozzles, or a volume median diameter (VMD) of 385 microns or greater for spinning atomizer nozzles.

For overhead chemigation*:*

Apply only when wind speed is 10 mph or less.

For airblast applications:

Do not direct spray above trees and vines, and turn off outward pointing nozzles at row ends and when spraying the outer 2 rows. Apply only when the wind speed is10 mph or less at the application site.

For aerial applications:
The boom width must not exceed 75% of the wingspan or 90% of the rotary blade. Apply only when the wind speed is10 mph or less. Use a coarse or coarser spray for standard nozzles (ASAE definition 572), or a volume median diameter (VMD) of 385 microns or greater for spinning atomizer nozzles. If the application includes a no-spray zone, do not release spray at a height greater than 10 feet above the ground or the crop canopy. When applications are made with a cross-wind, the swath will be displaced downwind. The applicator must compensate for this displacement at the downwind edge of the application area by adjusting the path of the aircraft upwind.
The applicator also must use all other measures necessary to control drift.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.
Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.
Not for use in residential areas. Use in park or recreational areas is prohibited.

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 entry into treated areas during the restricted entry interval (REI). The REI for each crop is listed in the directions for use associated with each crop.
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
- Shoes plus socks
- Chemical-resistant gloves made of any waterproof material
- Chemical-Resistant headgear for overhead exposure

DILUTION DIRECTIONS

The rate required for thorough, uniform coverage varies with plant growth at time of application. Apply recommended rate in adequate spray volumes to provide complete coverage of fruit and foliage.

- For aerial applications, apply in a minimum of 2 gals. of water per acre for field and row crops, and a minimum of 5 gals. of water per acre for tree and vine crops unless otherwise specified in the recommendation for a specific crop.

MIXING DIRECTIONS

Please read and observe the following directions for use:

- Packets containing Imidan 70-W are water-soluble. Avoid exposing inner bags to moisture.
- Do not allow bags to become wet prior to adding to the spray tank.
- Do not handle inner bag with wet hands.
- Reseal outer bag in a manner that protects remaining packets from moisture.
- Turn on spray tank agitation prior to adding water-soluble packets.
- To prepare the spray mixture, drop the required number of unopened packets, as determined under **USE RECOMMENDATIONS**, into the spray tank while filling with water to the desired level (whenever possible direct the fill water over the top of the packets to increase the rate of solubility). Where dosages of Imidan 70-W are expressed as fractions of packets, prepare the tank mix load to the lower of the nearest whole packet.
- Depending on the water temperature and the degree of agitation, the packets should be completely dissolved within approximately three to five minutes from the time they were added to the spray tank.
- Once the packets have completely dissolved, add other chemicals following conventional mixing order practices.
- Tank-mix solutions containing boron will affect the solubility of the water-soluble film. Thoroughly rinse the spray tank of any boron - containing spray solution prior to adding any water-soluble packets. When preparing tank mixes containing boron, add the correct amount of Imidan 70-W to the spray tank first. Make sure that the water-soluble packets are completely dissolved. Add boron preparations to the spray tank last. High concentrations of boron may cause dissolved water soluble bag material to precipitate and form insoluble residue in the spray tank system.

GENERAL CHEMIGATION INSTRUCTIONS

Apply this product only through one or more of the following types of systems: Sprinkler (including center pivot, lateral move, end tow, side (wheel) roll, traveler, solid set or hand move). Do not apply this product through any other type of irrigation system.
Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from nonuniform distribution of treated water.
Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system unless the pesticide label-prescribed safety devices for public water systems are in place.
If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers, or other experts. 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.

For Chemigation Systems Connected to Public Water Systems

Public water system means a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year.
Do not apply Imidan 70-W through any irrigation system supplied by a public water system unless the water supplied from the public water system is discharged into a reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap) between the outlet end of the fill pipe and the top or overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe. Before beginning chemigation, always make sure that the air gap exists and that there is no blockage of the overflow of the reservoir tank.
In addition, all directions and requirements specified for Sprinkler Irrigation Systems must be followed.

Sprinkler Irrigation Systems

The system must contain a functional check valve and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow.

The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump. 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.

The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops. The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.

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.

Do not apply when wind speed favors drift beyond the area intended for treatment.

Center pivot, motorized lateral move, or traveling gun types of equipment: Inject into the system for one revolution or run. Shut off injection equipment after one revolution or run, but continue to operate irrigation system until Imidan 70-W has been cleared from the last sprinkler head. Do not use end guns. The system should be run at maximum speed for a foliar application.

Wheel move, side roll, end tow, solid set, or hand move types of equipment: Adjust equipment to inject Imidan 70-W over a 30-60 minute period. Shut off injection equipment. Continue to operate irrigation system until Imidan 70-W has been cleared from the last sprinkler head. Imidan 70-W can be injected at the end of the irrigation cycle or as a separate application. Do not use end guns. Imidan 70-W must be premixed in a supply tank with water and other appropriate tank-mix chemicals. Agitation is necessary at all times.

Caution must be exercised in irrigation waters with a pH greater than 7. If the irrigation cycle will last longer than 8 hours and the Imidan 70-W is premixed in the supply tank, the tank mix must be buffered to a pH of 5.5 or lower. Please contact your Gowan sales representative should this situation apply. Application should be in sufficient water and of sufficient duration to apply the recommended rate evenly over the entire treated area.

No field runoff can be permitted during chemigation.

RESISTANCE MANAGEMENT

Imidan is an organophosphate insecticide. Based on historical use patterns in some areas, certain pest species listed on this label may have developed resistance to organophosphate insecticides. Consult your local agricultural advisor, State Cooperative Extension Service, or regional Gowan Company representative for recommendations.

USE LIMITATIONS

Do not exceed the maximum rate of Imidan 70-W per acre or the time limitations specified for the individual crops.

USE RECOMMENDATIONS

FRUIT AND NUT CROPS

DORMANT SPRAYS: Imidan 70-W may be used during dormancy to control specified insects listed in each crop grouping which may overwinter on the tree and vine crops. Imidan 70-W may be used in combination with spray oils; always follow spray oil manufacturer's label recommendations. **Pruning must occur before any dormant treatments of Phosmet.**

SPLIT APPLICATION SPRAYS: Applications to tree fruits and nuts may be made using a split application spray schedule. See crop for more specific application directions (if applicable).

The split application method may be used to improve efficacy and, in the case of nut crops, to time insecticide applications at the onset of hullsplit of different maturing varieties that may be present within a single orchard. Check with your local agricultural advisor, State Cooperative Extension Service or regional Gowan Company representative for recommendations.

PREHARVEST INTERVAL

The required days between the last application and harvest are given in ( ) after each crop name.

FRUIT AND NUT CROPS

CROP	PEST	USE RATE lbs./acre	COMMENTS
ALMONDS (30)	Peach Twig Borer	4 1/3 - 4½	Limit use on bearing almonds to one foliar application per season.
	• Do not prune for 7 days following an application of Imidan. • Nuts must be harvested mechanically. • Do not enter or allow entry into treated areas during the restricted entry interval (REI) of 3 days. • Limit spray drift; turn airblast spray nozzles inward on row ends; and do not apply when bees are in the area.		

FRUIT AND NUT CROPS (continued)

CROP	PEST	USE RATE lbs./acre	COMMENTS
ALMONDS (California only) (30)	Peach Twig Borer, Navel Orangeworm	4 1/3 - 5 1/3	In California only, to obtain optimum navel orangeworm control in the spring application, proper timing of sprays should be coordinated with effective use of a navel orangeworm monitoring system. Late season treatments must be applied before hull split reaches 10%.
	• Do not make more than 2 applications per season as a foliar spray. • Do not prune for 7 days following an application of Imidan. • Nuts must be harvested mechanically. • Do not enter or allow entry into treated areas during the restricted entry interval (REI) of 3 days. • Limit spray drift; turn airblast spray nozzles inward on row ends; and do not apply when bees are in the area.		
	DORMANT SPRAY: Peach Twig Borer, San Jose Scale	4 1/3 - 5 1/3	For control of scale insects during dormant application, tank mix recommended rate of Imidan with dormant spray oil. Follow oil manufacturer's use directions. Add oil to the spray tank last, after buffer and Imidan 70-W have been added.
	• Do not make more than 2 applications per season as a foliar spray. • Do not prune for 7 days following an application of Imidan. • Nuts must be harvested mechanically. • Do not enter or allow entry into treated areas during the restricted entry interval (REI) of 3 days. • Limit spray drift; turn airblast spray nozzles inward on row ends; and do not apply when bees are in the area.		
APPLES (7)	Apple Maggot, Codling Moth, Elm Spanworm, Dock Sawfly, European Corn Borer, European Sawfly, Fruittree Leafroller, Green Fruitworm, Gypsy Moth, Japanese Beetle, Mealybug, Orange Tortrix, Oriental Fruit Moth, Plum Curculio, Redbanded Leafroller, Redhumped Caterpillar, Rose Chafer, San Jose Scale	2 1/8 - 5 1/3 (or 3/4 - 1 lb. per 100 gals. not to exceed 5 1/3 lbs./acre)	For heavy insect infestations and areas west of the Rockies, use higher dosage rates (3 ½-5 1/3 lbs./acre). Repeat applications as necessary in accordance with insect infestations and local and State spray programs.
	• Do not enter or allow entry into treated areas during the restricted entry interval (REI) of 3 days. • Do not apply more than 30 lbs. Imidan 70-W per acre per crop season. • For use on crabapples in California only. • The user shall not authorize any person who is not covered by the Worker Protection Standard (WPS), such as members of the general public involved in "pick-your-own," "U-pick," or similar operations, to enter a treated area for 14 days after application. • Limit spray drift; turn airblast spray nozzles inward on row ends; and do not apply when bees are in the area.		
APPLES - Tank Mix with Methomyl (Lannate®) (Northeast only) (8)	For control of the insects listed above for apples, plus Apple Aphid, Obliquebanded Leafroller, Rosy Apple Aphid, Tarnished Plant Bug, Sparganothis Leafroller, Spotted Tentiform Leafminer, Tufted Apple Budmoth, Variegated Leafroller, White Apple Leafhopper	1 1/3 - 2 2/3 lbs. of Imidan 70-W plus ½ - 1 lb. 90% methomyl water soluble powder or 1½ - 3 pints 24% methomyl LV (1/3 - 2/3 lb. Imidan 70-W plus 2 - 4 oz. methomyl WSP or 6 - 9 oz. of methomyl LV per 100 gals. of water)	Apply as a full cover spray using up to 400 gals. per acre. Repeat as necessary in accordance with insect infestations and local and State spray programs.
	• Do not enter or allow entry into treated areas during the restricted entry interval (REI) of 3 days. • Do not use on Early MacIntosh or Wealthy varieties. • Do not graze/feed livestock under treated trees for 10 days after application. • Do not apply more than 30 lbs. per acre of Imidan 70-W per crop season. • The user shall not authorize any person who is not covered by the Worker Protection Standard (WPS), such as members of the general public involved in "pick-your-own," "U-pick," or similar operations, to enter a treated area for 14 days after application. • Limit spray drift; turn airblast spray nozzles inward on row ends; and do not apply when bees are in the area.		
APRICOTS (14)	Apple Maggot, Fruittree Leafroller, Japanese Beetle, Orange Tortrix, Oriental Fruit Moth, Peach Twig Borer, Plum Curculio, Redbanded Leafroller, Rose Chafer, Western Tussock Moth	2 1/8 - 4 ¼ (or 3/4 - 1 lb. per 100 gals. not to exceed 4 ¼ lbs./acre)	For heavy insect infestations and areas west of the Rockies, use higher dosage rates (4 ¼ lbs./acre). Repeat applications as necessary in accordance with insect infestations and local and State spray programs.
	• Do not enter or allow entry into treated areas during the restricted entry interval (REI) of 3 days. • Do not apply more than 13 lbs. Imidan 70-W per acre per year. • The user shall not authorize any person who is not covered by the Worker Protection Standard (WPS), such as members of the general public involved in "pick-your-own," "U-pick," or similar operations, to enter a treated area for 14 days after application. • Limit spray drift; turn airblast spray nozzles inward on row ends; and do not apply when bees are in the area.		

FRUIT AND NUT CROPS (continued)

CROP	PEST	USE RATE lbs./acre	COMMENTS
BLUEBERRIES (High Bush) (3)	Blueberry Maggot, Cherry Fruitworm, Cranberry Fruitworm, Flea Beetle, Grasshopper, Japanese Beetle, Plum Curculio, Obliquebanded Leafroller, Redbanded Leafroller, Redstriped Fireworm, Rose Chafer, Sawfly, Spanworm, Strawberry Root Weevil Adult	1 1/3	If applying by air, apply in a minimum of 2 gals. of water by aircraft. Additional applications may be made when indicated by insect infestations and local or State spray programs.
	• Do not enter or allow entry into treated areas during the restricted entry interval (REI) of 24 hours. • Do not apply more than 7 1/8 lb Imidan 70-W per acre per year. • Do not make more than 5 applications per acre per year. • Do not apply within 3 days of harvest. • Limit spray drift; turn airblast spray nozzles inward on row ends; and do not apply when bees are in the area.		
BLUEBERRIES (Low Bush) (3)	Blueberry Maggot, Cherry Fruitworm, Cranberry Fruitworm, Flea Beetle, Grasshopper, Japanese Beetle, Plum Curculio, Obliquebanded Leafroller, Redbanded Leafroller, Redstriped Fireworm, Rose Chafer, Sawfly, Spanworm, Strawberry Root Weevil Adult	1 1/3	If applying by air, apply in a minimum of 2 gals. of water by aircraft. Additional applications may be made when indicated by insect infestations and local or State spray programs
	• Do not enter or allow entry into treated areas during the restricted entry interval (REI) of 3 days. • Do not apply more than 5 1/8 lb Imidan 70-W per acre per year. • Do not make more than 5 applications per acre per year. • Do not apply within 3 days of harvest. • Limit spray drift; turn airblast spray nozzles inward on row ends; and do not apply when bees are in the area.		
CRANBERRIES (14) (Except California)	Fireworms, Cranberry Fruitworm, Spanworms, Gypsy Moth	1 1/3 – 4 (not to exceed 15.6 lbs. of Imidan 70-W per season)	For heavy insect infestations, use higher dosage rates. For best results, treat early-stage larvae. Apply in sufficient water to obtain complete coverage. Repeat applications no sooner than 10 days with a minimum spray volume of 20 gals. per acre by ground and 2 gals. per acre by air.
	• Do not enter or allow entry into treated areas during the restricted entry interval (REI) of 3 days. • Do not apply within 14 days of harvest. • May need to use higher dosage for Fruitworm and Cranberry Weevil control. • Consult with your pest management advisor or local Extension Service for specific recommendations on rates and timing. • Limit spray drift; turn airblast spray nozzles inward on row ends; and do not apply when bees are in the area.		
CHERRIES Sour (Tart) (7)	Cherry Fruit Fly, Fruittree Leafroller, Japanese Beetle, Peach Twig Borer, Plum Curculio, Rose Chafer, San Jose Scale	2 1/8 - 2½ (or ¾ lb. per 100 gals. not to exceed 2 ½ lbs./acre)	Repeat applications as necessary in accordance with insect infestations and local and State spray programs.
	Syneta Beetle	1 1/3	Apply in a minimum of 50 gals. of water per acre. Use prebloom (popcorn stage) if beetles are present, and allow 5 days before introducing bees. If not sprayed prebloom and Syneta beetle is a problem, apply at petal fall prior to shuck fall.
	• Do not enter or allow entry into treated areas during the restricted entry interval (REI) of 3 days. • Do not apply more than 7 ½ lbs. Imidan 70-W per acre per year. • The user shall not authorize any person who is not covered by the Worker Protection Standard (WPS), such as members of the general public involved in "pick-your-own," "U-pick," or similar operations, to enter a treated area for 14 days after application. • Limit spray drift; turn airblast spray nozzles inward on row ends; and do not apply when bees are in the area.		
GRAPES (East of the Rockies) (See text for PHI)	Rose Chafer, Banded Grape Bug, Flea Beetle, Grape Berry Moth, Grape Cane Borer, Grape Cane Girdler, Grape Leafhopper, Grape Mealybug, Japanese Beetle, Lygocoris Bug, Redbanded Leafroller	1 1/3 - 2 1/8	For grape berry moth, apply prebloom, postbloom, first and late cover sprays as needed. For grape leafhopper, apply when most nymphs hatch (generally coincides with grape berry moth). Use higher rates for control of Japanese beetle. Spray both sides of each row, and tops of vines to assure adequate coverage of fruit and foliage. Repeat applications as necessary in accordance with insect infestations and local and State spray programs.
	• Do not apply within 7 days of harvest when using rates of 1 1/3 lbs. per acre or less. • Do not apply within 14 days of harvest when using rates greater than 1 1/3 lbs. per acre. • Do not enter or allow entry into treated areas during the restricted entry interval (REI) of 14 days. • Do not apply more than 6 ½ lbs. Imidan 70-W per acre per year. • Limit spray drift; turn airblast spray nozzles inward on row ends; and do not apply when bees are in the area.		

FRUIT AND NUT CROPS (continued)

CROP	PEST	USE RATE lbs./acre	COMMENTS
GRAPES (West of the Rockies) (See text for PHI)	Grape Mealybug, Vine Mealybug	2 1/8	Apply prior to bud break as a delayed dormant treatment in combination with oil or spreader sticker. Use adequate volume to ensure thorough coverage.
	Grape Mealybug, Vine Mealybug, Grape Leaffolder, Omnivorous Leafroller, Western Grapeleaf Skeletonizer	1 1/3	Apply as early as first sizing spray and repeat at 10 - 14 day intervals as needed to provide additional insect control. Adequately cover fruit and foliage when insects are present.
	Grape Leaffolder, Omnivorous Leafroller, Western Grapeleaf Skeletonizer	1 - 2 1/8	Adequately cover fruit and foliage when insects are present. When applying more than 1 1/3 lbs. of Imidan 70-W, use proper spray volume pressure and nozzling in order to minimize the possibility of visible residue associated with wettable powder.
	• Do not apply within 7 days of harvest when using rates of $1^1/_3$ lbs. per acre or less. • Do not apply within 14 days of harvest when using rates greater than $1^1/_3$ lbs. per acre. • Do not enter or allow entry into treated areas during the restricted entry interval (REI) of 14 days. • Do not apply more than 6 ½ lbs. Imidan 70-W per acre per year. • Limit spray drift; turn airblast spray nozzles inward on row ends; and do not apply when bees are in the area.		
NECTARINES (14)	Apple Maggot, Japanese Beetle, Omnivorous Leafroller, Oriental Fruit Moth, Peach Twig Borer, Plum Curculio, Redbanded Leafroller, Rose Chafer, San Jose Scale	2 1/8 - 4 1/4 (or ¾ -1 lb. per 100 gals. not to exceed 4 1/4 lbs./acre)	For heavy insect infestations and areas west of the Rockies, use higher dosage rates (4 1/4 lbs./acre). Repeat applications as necessary in accordance with insect infestations and local and State spray programs.
	• Do not enter or allow entry into treated areas during the restricted entry interval (REI) of 3 days. • Do not apply more than 13 lbs. Imidan 70-W per acre per year. • Do not use Omite® in combination with Imidan 70-W on late maturing nectarine varieties as fruit injury may result. • The user shall not authorize any person who is not covered by the Worker Protection Standard (WPS), such as members of the general public involved in "pick-your-own," "U-pick," or similar operations, to enter a treated area for 14 days after application. • Limit spray drift; turn airblast spray nozzles inward on row ends; and do not apply when bees are in the area. • In California, REI is 5 days.		
PEACHES (14)	Japanese Beetle, Oriental Fruit Moth, Peach Twig Borer, Plum Curculio, Rose Chafer, San Jose Scale	2 1/8 - 4 1/4 (or ¾ -1 lb. per 100 gals. not to exceed 4 1/4 lbs./acre)	For heavy insect infestations and areas west of the Rockies, use higher dosage rates (4 1/4 lbs./acre). Repeat applications as necessary in accordance with insect infestations and local and State spray programs.
	• Do not enter or allow entry into treated areas during the restricted entry interval (REI) of 3 days. • Do not apply more than 17 lbs. Imidan 70-W per acre per crop season. • The user shall not authorize any person who is not covered by the Worker Protection Standard (WPS), such as members of the general public involved in "pick-your-own," "U-pick," or similar operations, to enter a treated area for 14 days after application. • Limit spray drift; turn airblast spray nozzles inward on row ends; and do not apply when bees are in the area. • In California, REI is 5 days.		
PEARS (7)	Apple Maggot, Codling Moth, Elm Spanworm, Fruittree Leafroller, Gypsy Moth, Japanese Beetle, Mealybug, Plum Curculio, Redbanded Leafroller, Rose Chafer	2 1/8 – 5 1/2 (or ¾ - 1 lb. per 100 gals. not to exceed 7 1/8 lbs./acre)	For heavy insect infestations and areas west of the Rockies, use higher dosage rates (3½ - 7 1/8 lbs./acre). Repeat applications as necessary in accordance with insect infestations and local and State spray recommendations.
	• Do not enter or allow entry into treated areas during the restricted entry interval (REI) of 3 days. • Do not apply more than 16 lbs. Imidan 70-W per acre per year. • The user shall not authorize any person who is not covered by the Worker Protection Standard (WPS), such as members of the general public involved in "pick-your-own," "U-pick," or similar operations, to enter a treated area for 14 days after application. • Limit spray drift; turn airblast spray nozzles inward on row ends; and do not apply when bees are in the area.		

FRUIT AND NUT CROPS (continued)

CROP	PEST	USE RATE lbs./acre	COMMENTS
PECANS (14)	Black Pecan Aphid, Fall Webworm*, Hickory Shuckworm, Pecan Nut Casebearer, Pecan Weevil*, Southern Green Stink Bug*, Spittlebug	2 - 3 1/8 (or 1 lb. per 100 gals. not to exceed 3 1/8 lbs./acre)	For heavy insect infestations, use higher dosage rates. Check with your local Extension Service for recommended use rates in your area. Apply in sufficient water for complete coverage when infestations start. Repeat applications as necessary in accordance with insect infestations and local and State spray programs. For low to moderate populations of pecan weevil, use 3 1/8 lbs. per acre and repeat application at 7 day intervals. *Adequate control may not be achieved when heavy populations are present.
	• Do not enter or allow entry into treated areas during the restricted entry interval (REI) of 3 days. • Do not apply more than 10 lbs. Imidan 70-W per acre per year. • Do not prune for 7 days following an application of Imidan. • Nuts must be harvested mechanically. • Do not graze or feed livestock on cover crops grown in treated pecan groves. • Limit spray drift; turn airblast spray nozzles inward on row ends; and do not apply when bees are in the area.		
PISTACHIOS (California only) (14)	Navel Orangeworm, Obliquebanded Leafroller	4 1/3 - 5 2/3	For optimum navel orangeworm control in the spring, use an appropriate navel orangeworm monitoring system to determine proper timing of the spray. Late season treatment for navel orangeworm must be applied before hull split reaches 10%.
	• Do not enter or allow entry into treated areas during the restricted entry interval (REI) of 3 days. • Do not apply more than 17 1/8 lbs. Imidan 70-W per acre per year. • Do not prune for 7 days following an application of Imidan. • Do not apply more than 5 2/3 lbs. per acre per season as a foliar spray. • Nuts must be harvested mechanically. • Do not allow livestock to graze or feed on cover crops in treated pistachio groves. • Limit spray drift; turn airblast spray nozzles inward on row ends; and do not apply when bees are in the area.		
	DORMANT SPRAY: Peach Twig Borer, San Jose Scale	3 - 4 1/3	Apply as a full coverage dormant spray with a suitable spray oil according to oil manufacturer's specifications. Thorough coverage is essential for effective pest control.
	• Do not enter or allow entry into treated areas during the restricted entry interval (REI) of 3 days. • Do not apply more than 17 1/8 lbs. Imidan 70-W per acre per year. • Do not prune for 7 days following an application of Imidan. • Do not apply more than 5 2/3 lbs. per acre per season as a foliar spray. • Nuts must be harvested mechanically. • Do not allow livestock to graze or feed on cover crops in treated pistachio groves. • Limit spray drift; turn airblast spray nozzles inward on row ends; and do not apply when bees are in the area.		
PLUMS, PRUNES (7)	Apple Maggot, Codling Moth, Japanese Beetle, Omnivorous Leafroller, Oriental Fruit Moth, Peach Twig Borer, Plum Curculio, Redhumped Caterpillar, Redbanded Leafroller, Rose Chafer, San Jose Scale	2 1/8 - 4 1/4 (or 3/4 - 1 lb. per 100 gals. not to exceed 4 1/4 lbs./acre)	For heavy insect infestations and areas west of the Rockies, use higher dosage rates (3½ - 4 1/4 lbs./acre). Repeat applications as necessary in accordance with insect infestations and local and State spray programs.
	• Do not enter or allow entry into treated areas during the restricted entry interval (REI) of 3 days. • Do not apply more than 13 lbs. Imidan 70-W per acre per year. • The user shall not authorize any person who is not covered by the Worker Protection Standard (WPS), such as members of the general public involved in "pick-your-own," "U-pick," or similar operations, to enter a treated area for 14 days after application. • Limit spray drift; turn airblast spray nozzles inward on row ends; and do not apply when bees are in the area.		
WALNUTS, FILBERTS, and **OTHER NUTS** (including Beech nut, Brazil nut, Butternut, Cashew, Chestnut, Chinquapin, Hickory nut, Macadamia nut, and all hybrids or cultivars of these) (28)	Codling Moth, Navel Orangeworm, Walnut Husk Fly	4 1/3 - 8 ½	For heavy insect infestations, use higher dosage rates. Repeat applications as necessary in accordance with insect infestations and local and State spray programs.
	• Do not enter or allow entry into treated areas during the restricted entry interval (REI) of 7 days. • Nuts must be harvested mechanically. • Do not prune for 7 days following an application of Imidan. • Do not apply more than 17 1/8 lbs. Imidan 70-W per acre per year. • Do not apply more than 8 ½ lbs. per acre per application or more than 5 times per season. • Do not apply after hull split. • Limit spray drift; turn airblast spray nozzles inward on row ends; and do not apply when bees are in the area.		

FIELD, FORAGE, AND VEGETABLE CROPS

CROP	PEST	USE RATE lbs./acre	COMMENTS
ALFALFA (See text for PHI)	Alfalfa Blotch Leafminer*, Alfalfa Plant Bug*, Common and Egyptian Alfalfa Weevil larvae and adults, Fleahopper, Grasshopper, Lygus Bugs*, Pea Aphid*, Potato Leafhopper**, Leafhoppers, Spittlebugs	Arizona, California and Nevada: 1 All other alfalfa growing regions: 1 - 1 1/3	Apply in a minimum of 10 gals. of water by ground equipment (20 gals. for dense stands) or 5 gals. of water by aircraft. Consult your local farm advisor regarding the proper timing of application. Larvae should be sprayed when they are actively feeding. For application by irrigation systems, apply specified dosage per acre. Follow all directions under the GENERAL CHEMIGATION section of this label. * For control of pea aphid and other alfalfa pests, use Imidan in tank mix combination with other insecticides registered for use on alfalfa. ** Recommended for potato leafhopper in the Northeast and North Central States only.
	• Do not enter or allow entry into treated areas during the restricted entry interval (REI) of 5 days. • Do not apply more than once per cutting. • Do not apply to alfalfa in the bloom period. • Do not use with latex or pineolene-based adjuvants or any agricultural sticker or extender. • In Arizona, California, and Nevada, do not graze or cut for hay within 14 days of application. • In all other alfalfa growing regions, do not graze or cut for hay within 7 days of application. • Limit spray drift; turn airblast spray nozzles inward on row ends; and do not apply when bees are in the area.		
FIELD MARGINS (margins of cultivated fields and forage crop sites listed on this label)	Grasshopper	2 1/8 - 2 3/4	Apply in 10 - 50 gals. of water per acre (20 - 50 gals. in dense stands) by ground equipment or in 5 - 10 gals. of water by aircraft.
	• Do not enter or allow entry into treated areas during the restricted entry interval (REI) of 5 days. • Do not graze livestock in treated areas. • Do not harvest for food or feed.		
PEAS, Fresh and Dry (Pacific Northwest only) (18)	Pea Weevil, Pea Leaf Weevil	1 - 1 1/3	Apply in a minimum of 5 gals. of water per acre by aircraft or 20 gals. of water by ground equipment. Apply between emergence and early pod formation when adult populations are present but before eggs are laid. Consult your local County Agent or Extension Service Representative regarding proper timing of application.
	• Do not enter or allow entry into treated areas during the restricted entry interval (REI) of 5 days. • Do not apply more than 4 lbs. Imidan 70-W per acre per crop season. • Do not graze or feed forage to livestock within 7 days of harvest. • Do not cut treated fresh pea forage for hay within 10 days of application.		

FIELD, FORAGE, AND VEGETABLE CROPS (Continued)

CROP	PEST	USE RATE lbs./acre	COMMENTS
POTATOES (7)	Colorado Potato Beetle, European Corn Borer, Potato Flea Beetle, Potato Leafhopper, Potato Tuber Moth	1 1/3	Apply in a minimum of 2 gals. of water per acre. Repeat applications as necessary throughout the growing season with a minimum of 10 days between applications. For application by irrigation systems, apply specified dosage per acre. Follow all directions under the CHEMIGATION section of this label.
	• Do not enter or allow entry into treated areas during the restricted entry interval (REI) of 5 days. • Do not apply more than 6 2/3 lbs. Imidan 70-W per acre per crop season. • Do not apply within 7 days of harvest. • Potatoes must be harvested mechanically. • Limit spray drift; turn airblast spray nozzles inward on row ends; and do not apply when bees are in the area.		
SWEET POTATOES (7)	Sweet Potato Weevil, Banded Cucumber Beetle, Whitefringed Beetle, suppression of White Grub and Wireworm	1 1/3	Foliar applications: Apply 1 1/3 lbs. of Imidan 70-W in a minimum of 2 gallons of water per acre as a full coverage spray. Plantbed treatment: Apply 1 1/3 lbs. in 25-50 gallons of water per acre. Allow a minimum of 10 days between foliar and plantbed re-applications.
	• Do not enter or allow entry into treated areas during the restricted entry interval (REI) of 4 days for seedbed treatment and 5 days for foliar applications. • Do not make more than 5 applications per season. • Do not apply within 7 days of harvest. • Do not apply more than 6 2/3 lbs. of Imidan 70-W per acre per crop season. • Sweet potatoes must be harvested mechanically. • Limit spray drift; turn airblast spray nozzles inward on row ends; and do not apply when bees are in the area.		

OTHER USES (NOT FOR HOMEOWNER USE)

CROP	PEST	USE RATE	COMMENTS
CONIFER TREES (Growing in Christmas Tree Nurseries and Plantations)	European Pine Shoot Moth *(Rhyacionia buoliana),* Gypsy Moth, Nantucket Pine Tip Moth, Pitch Eating Weevil, Pales Weevil, Adult Root Collar Weevil, Sawfly	1 1/3 – 1 1/2 lbs. per acre **OR** For individual trees 1 1/3 lbs. per 100 gals.	Apply in sufficient water to achieve thorough and complete coverage through aerial or ground application equipment. Apply when pest populations reach economic threshold levels as determined by the local Extension Service, Forest Service, or other monitoring system. The addition of a sticker or extender may help retain Imidan 70-W on the needles under high rainfall conditions.
	• Do not enter or allow entry into treated areas during the restricted entry interval (REI) of 13 days. • Do not make more than 3 applications per year. • Limit spray drift; turn airblast spray nozzles inward on row ends; and do not apply when bees are in the area.		
CONIFER TREE SEED ORCHARDS	Seedworms, Coneworms, Seed Bugs, Mealybugs	1 1/3 – 1 1/2 lbs. per acre	Thorough coverage of cones is necessary for maximum control. Apply in sufficient water for complete coverage. First application should be applied within 30 days of peak pollen flight followed by 3-6 applications as needed.
	• Do not enter or allow entry into treated areas during the restricted entry interval (REI) of 13 days. • Do not make more than 3 applications per year. • Limit spray drift; turn airblast spray nozzles inward on row ends; and do not apply when bees are in the area.		
CONIFER SEEDLINGS (White, Slash and Loblolly)	Pales Weevil *(Hylobius pales*), Pitch Eating Weevil *(Pachylobius picivorus)*	*4%* Top Dip Solution Use this amount of Imidan To make / 70-W 5 gals. / 2½ lbs. 30 gals. / 14 lbs. 50 gals. / 24 lbs. 100 gals. / 48 lbs.	Use Imidan 70-W as a 4% top dip, dipping down to and including root collar only. Dip in bundles loose enough to allow solution to penetrate the bundles. Avoid coverage of roots. Swish tops in solution for 10 to 15 seconds to assure adequate coverage of all top growth. Drain and allow seedlings to dry before planting. The addition of a sticker or extender may help retain Imidan 70-W on the needles under high rainfall conditions. Some slight needle burn and first year growth reduction may occur on treatment of loblolly pine. Agitate frequently to keep Imidan 70-W in suspension. Five gals. of solution should be enough to treat 10,000 seedlings.
	• Do not keep Imidan solution overnight. Make up a fresh batch each day that seedlings will be dipped. • Handlers must also wear long-sleeved shirt and long pants, shoes, socks**,** additional layer of clothing, chemical-resistant gloves**,** chemical-resistant apron and an air purifying respirator (OV).		

OTHER USES (NOT FOR HOMEOWNER USE)

CROP	PEST	USE RATE	COMMENTS
DECIDUOUS TREES, and **WOODY EVERGREENS**	Elm Spanworm, Birch Leafminer, Eastern Tent Caterpillar, Elm Leaf Beetle larvae, Gypsy Moth, Leafhopper, Magnolia Leafminer, Mealybug, Japanese Beetle, Redhumped Caterpillar, Snails, Slugs, Spring Cankerworm	¾ - 1 lb. per 100 gals.	Apply when insects or their damage occur. Thoroughly wet all parts of the affected plants to the point of runoff. For heavy infestations, use the higher dosage rate. Repeat application as necessary to maintain insect control. Choose a cool calm period, preferably in early morning or evening.
	• Do not enter or allow entry into treated areas during the restricted entry interval (REI) of 13 days. • Do not make more than 3 applications per year. • Do not apply if rain is expected or before leaf surfaces are dry.		
ORNAMENTAL PLANTS AND NONBEARING FRUIT AND NUT TREES AND VINES (Growing in nurseries, and established ornamental landscape plantings)	Elm Spanworm, Birch Leafminer, Eastern Tent Caterpillar, Elm Leaf Beetle Larvae, Gypsy Moth, Leafhopper, Magnolia Leafminer, Mealybug, Japanese Beetle, Redhumped Caterpillar, Snails, Slugs, Spring Cankerworm	¾ - 1 lb. per 100 gals.	Apply in sufficient water to achieve thorough and complete coverage through aerial or ground application equipment. Apply when pest populations reach economic threshold levels as determined by the local Extension Service, Forest Service, or other monitoring system.
	• Do not enter or allow entry into treated areas during the restricted entry interval (REI) of 24 hours. • Do not make more than 3 applications per year.		

STORAGE AND DISPOSAL

DO NOT contaminate water, food or feed by storage or disposal.
STORAGE: Store in a cool, dry place.
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.
SPILL OR LEAK: A small spill can be handled routinely. Use adequate ventilation and wear an air-supplied respirator to prevent inhalation. Wear suitable protective clothing and eye protection to prevent skin and eye contact. Use the following procedures:

1. Sweep up spilled material being careful not to create dust.
2. Place sweepings in an open drum.
3. Generously cover the contaminated areas with a common household detergent. Using a stiff brush and small amounts of water, work the detergent into the spill material forming a slurry. Do not splatter on one's self or bystanders. Completely avoid skin and eye contact with this material. Brush the slurry into cracks and crevices and allow to stand for 2 - 3 minutes.
4. Spread a suitable absorbent such as clay, sawdust, or kitty litter on the slurried liquid. Shovel absorbed material into an open drum.
5. Repeat if necessary.
6. Flush area with water while observing proper environmental considerations. Seal drum and dispose of contaminated material in an approved pesticide landfill.

Large spills must be handled according to a predetermined plan. For assistance in developing a plan, contact Gowan Company.

FOR 24-HOUR EMERGENCY ASSISTANCE (SPILL, LEAK, OR FIRE), CALL CHEMTREC (800) 424-9300.
For other product information, contact Gowan Company or see Material Safety Data Sheet

NOTICE OF CONDITIONS OF SALE AND WARRANTY AND LIABILTY LIMITATIONS

Important: Read the entire Directions for Use and Notice of Conditions of Sale and Warranty and Liability Limitations before using this product. If terms are not acceptable return the unopened container for a full refund.

Our recommendations for use of this product are based on tests believed to be reliable. However, it is impossible to eliminate all risk associated with the use of this product. Crop injury, inadequate performance, or other unintended consequences may result due to soil or weather conditions, off target movement, presence of other materials, method of use or application, and other factors, all of which are beyond the control of Gowan Company. All such risks shall be assumed by the Buyer and User.

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