Japanese Beetle
Eradication Response Plan
2017

Oregon
Department
of Agriculture

Oregon.gov/ODA
Rev: 3/30/2017

Background

In 2016 Oregon Department of Agriculture (ODA) program staff caught 369 Japanese beetles (JB) in the Cedar Mill and Bethany areas of Washington County, and another 4 beetles at Portland International Airport (PDX) and Swan Island in Portland. This is the largest number of beetles ever caught in Oregon in a single field season. The JB infestation in Cedar Mill and Bethany areas of Washington County may have started 2 to 3 years ago, but it went undetected because of budget cuts to the JB monitoring program (which does not receive federal funding). ODA is planning a large-scale eradication program for the JB infestation in Cedar Mill and Bethany areas in 2017 (Appendix 1).

Threats of introductions come from infested states in the eastern US each year as interstate commerce and other pathways for introduction provide a mechanism for the pest to expand its range. The JB program in Oregon began in the 1940's. By 1960, beetles were being found on transcontinental planes landing at PDX. Airplane inspections began in earnest at PDX and at Klamath Falls, where military and commercial aircraft were coming in from eastern states. An economic analysis was conducted to determine the impact of a breeding population of Japanese beetles (Appendix 3). An informal environmental assessment was conducted (Appendix 4).

ODA also enforces a strict exterior JB quarantine rule (Quarantine Against Japanese Beetle and Related Pests 603-052-0127, Appendix 2) to prevent new introductions from infested states via nursery stock. ODA has trapped 776 JBs and conducted seven successful eradication programs in places around Oregon since the 1980's. In addition, treatments at the Portland International Airport (PDX) and vicinity have been ongoing for more than a decade. The JB quarantine rule also stipulates ODA respond to infestations found in Oregon by creating a response plan to conduct eradication activities.

Proposed Treatment Plan

ODA employees will supervise a hired commercial pest control operator to spread a granular application of Acelepryn G on the turfgrass of all properties (residential and commercial) in the affected area (Appendix 1). There will be one application of Acelepryn G (http://www.cdms.net/ldat/ldB7R006.pdf) during April or May of 2017. Additional treatments may be required in the spring of 2018, 2019, 2020, and 2021.This application is free to all residents and property owners in the affected area. It will take ODA approximately six weeks to apply the insecticide to all properties in the affected area.

Acelepryn G is a Group 28 reduced-risk insecticide which means it has the lowest relative toxicity compared to other insecticides labeled for the same purpose. The active ingredient in Acelepryn G is chlorantraniliprole. The Oregon Health Authority has developed frequently asked questions regarding chlorantraniliprole and can be found on their website at the following link:

https://public.health.oregon.gov/HealthyEnvironments/HealthyNeighborhoods/Pesticides/Pages/Chlorantraniliprole-and-Your-Health-FAQs.aspx

ODA will apply the insecticide according to the label instructions. It is estimated to take five years to ensure Japanese beetle is completely eradicated. It will take 90 days for the insecticide to work its way into the soil. The insecticide will target the grubs that hatch from eggs this year, not the grubs that will emerge into adults this summer.

The pesticide treatment targets newly hatched grubs in the soil, which are the most vulnerable life stage of JB. Because of this, adult Japanese beetles will be present this summer.

Proposed Surveillance Activities

The cornerstone of this proposed project is a high-density grid of surveillance traps (Appendix 1) in and around the infested area. ODA proposes increasing the number of traps to 200 / sq. mile in the treatment area, 49 / sq. mile adjacent to the treatment area and 25 /sq. mile outside the high-risk area. Statewide trapping levels will be an estimated 7 / sq. mile. The total delimiting (response to detected beetles) traps statewide will be 3,442. The combined total number of traps statewide will be approximately 7,500. This represents an increase of 70% relative to the number of traps placed in 2016.

Implementing Quarantine Measures within Treatment Area

The JB is under ground 10 months of the year. During the larval and pupa stages of the beetle's life, residents do not need to take special precautions in disposing of above-ground yard debris. When the JB is below-ground, care needs to be taken in disposing of sod and soil that has been disturbed. The beetle is typically above-ground in July and August. During this time, precautions need to be taken in disposing of plants as well as grass clippings. The disposal procedures described in the next section will be strongly recommended through the 2017 growing seasons.

Those Living within the Impacted Area

Green waste needs to be treated in three distinct categories:

1) Leafy and woody branch material: Foliage, tree trimmings
2) Plant material containing soil: Sod, rooted plants, live plants
3) Lawn clippings

Soil, root balls, and sod need to be bagged and disposed of in the residential garbage waste collection bins: Entire year.

Lawn clippings need to be bagged and disposed of in the residential garbage waste collection bins: June - October.

Leafy and woody branch material can be disposed of within the green waste recycling containers: Entire year.

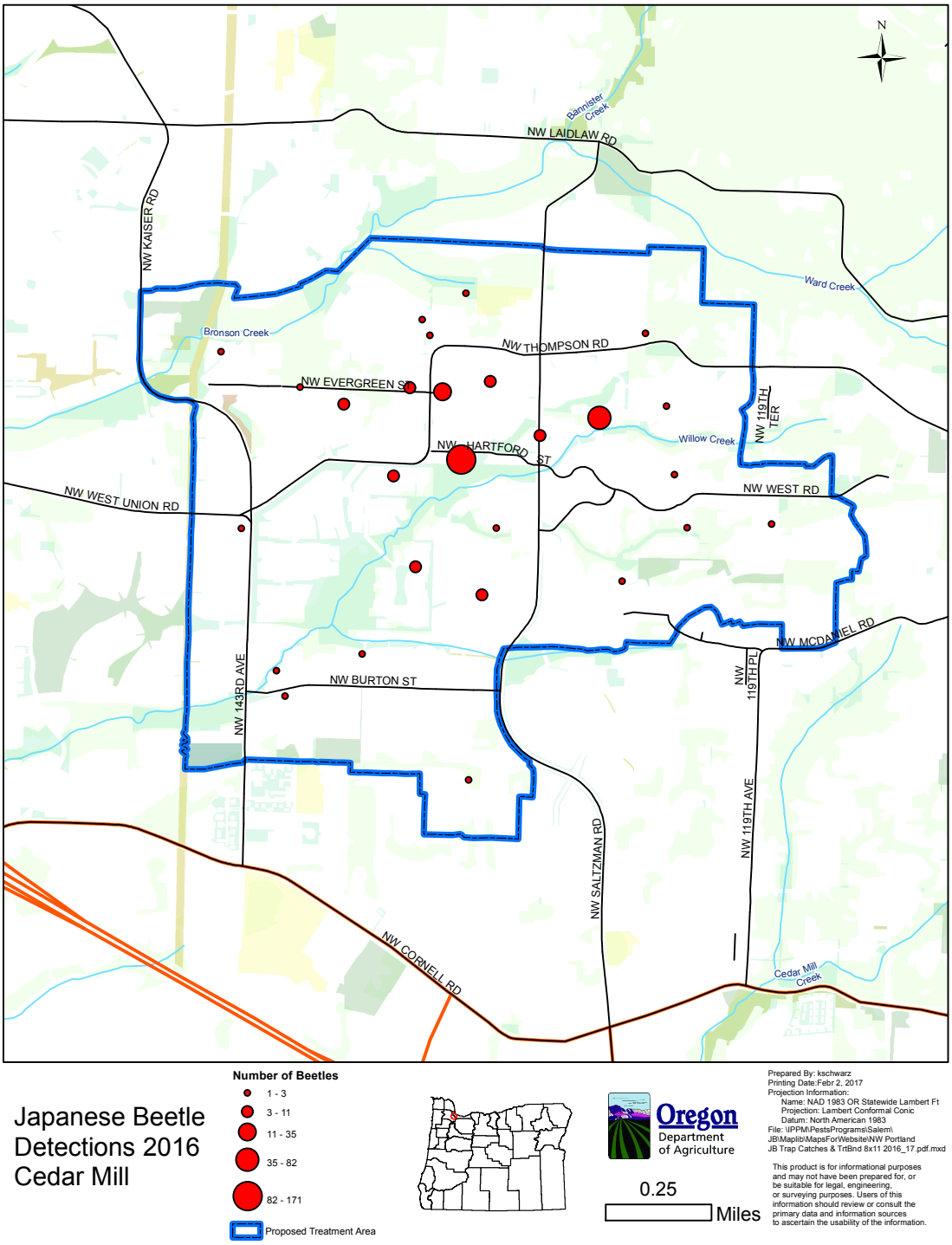
Lawns should not be aerated or power raked in the impacted area. ODA will send a letter to all known landscapers in Cedar Mill and Bethany areas informing them of the special restrictions on disposal of green waste in the impacted area. Between May and October, residents and businesses in the impacted area who have their lawn mowed by a professional service need to ensure that their lawn clippings are bagged and taken to the Washington County landfill.

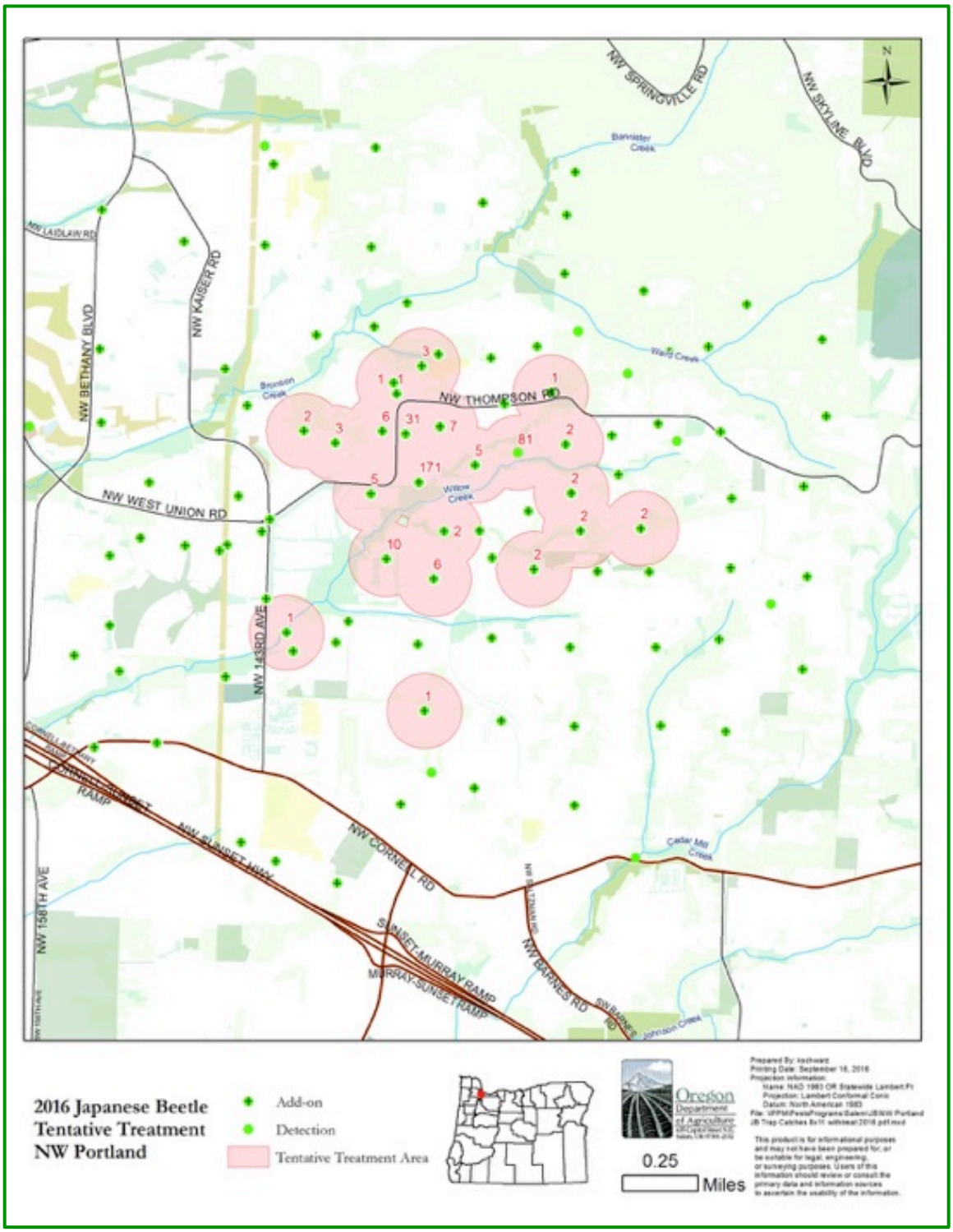
Mulching of grass clippings is acceptable any time of the year.

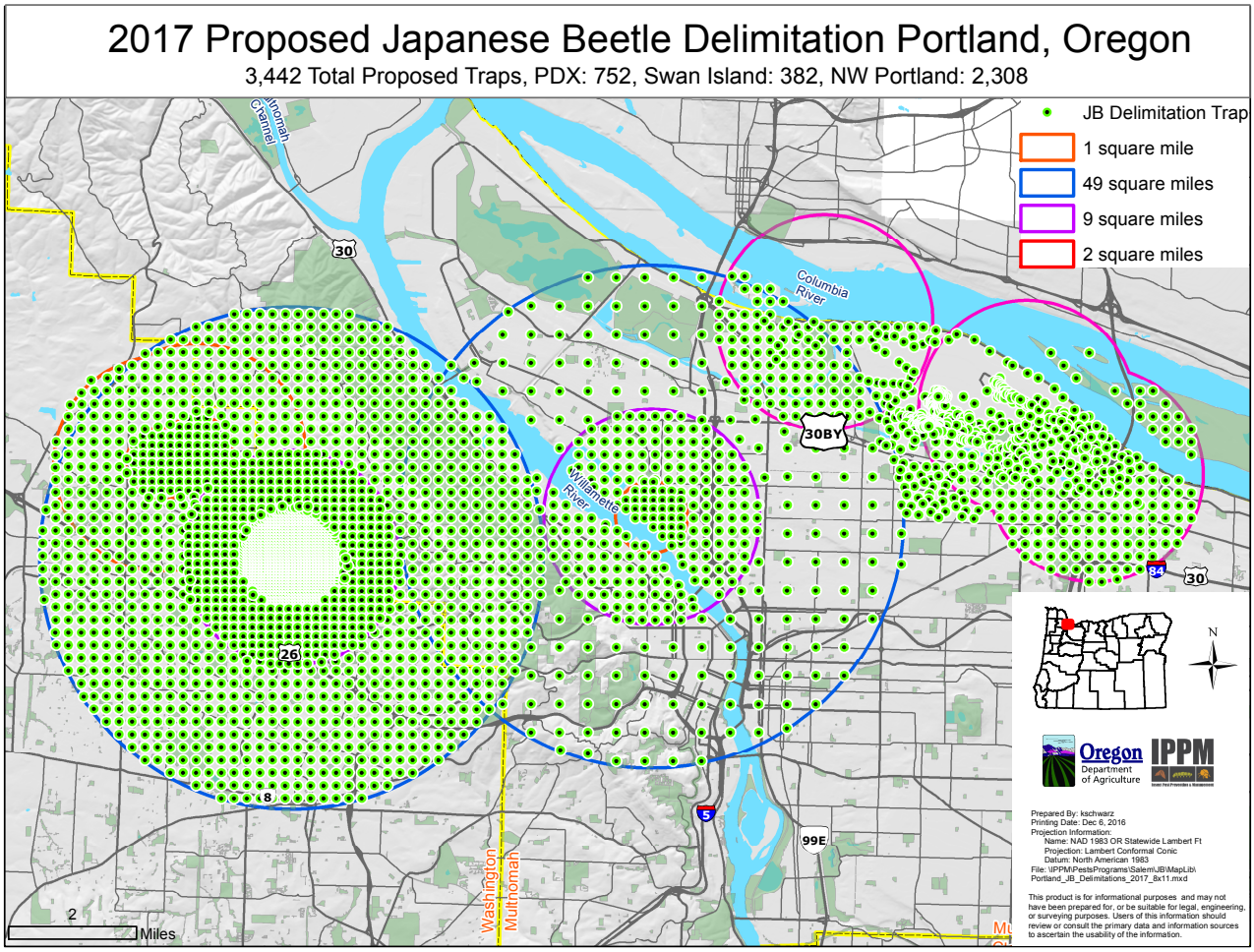
Movement of live outdoor plants from the impacted area will be discouraged.

Appendix 1: Maps

Cedar Mill Japanese Beetle Quarantine and Treatment Boundary




NW SPRINGVILLE RD
NW SKYLINE BLVD
Bannister Creek
NW LAIDLAW RD
NW BETHANY BLVD
NW KAISER RD
Bronson Creek
Ward Creek
NW THOMPSON RD
NW WEST UNION RD
Willow Creek
NW 143RD AVE
NW 158TH AVE
RAMP
NW SUNSET HWY
NW CORNELL RD
SUNSET-MURRAY RAMP
MURRAY-SUNSET RAMP
NW BARNES RD
SW BARNES RD
Cedar Mill Creek
Johnson Creek
2016 Japanese Beetle
Tentative Treatment
NW Portland
Add-on
Detection
Tentative Treatment Area
0.25
Miles


2017 Proposed Japanese Beetle Delimitation Portland, Oregon
3,442 Total Proposed Traps, PDX: 752, Swan Island: 382, NW Portland: 2,308
JB Delimitation Trap
1 square mile
49 square miles
9 square miles
2 square miles
Columbia River
Willamette River
Multnomah Channel
30
30BY
84
26
8
5
99E
Washington
Multnomah
2
Miles
N
Oregon Department of Agriculture
IPPM
Prepared By: kschwarz
Printing Date: Dec 6, 2016
Projection Information:
Name: NAD 1983 OR Statewide Lambert Ft
Projection: Lambert Conformal Conic
Datum: North American 1983
File: \IPPM\PestsPrograms\Salem\JB\MapLib\Portland_JB_Delimitations_2017_8x11.mxd
This product is for informational purposes and may not have been prepared for, or be suitable for legal, engineering, or surveying purposes. Users of this information should review or consult the primary data and information sources to ascertain the usability of the information.

Appendix 2: Quarantine Against Japanese Beetle and Related Pests

Quarantine Against Japanese Beetle and Related Pests

603-052-0127

Quarantine; Japanese Beetle, European Chafer and Oriental Beetle

(1) Establishing a Quarantine. A quarantine is established against the pest known as Japanese beetle (Popillia japonica) European chafer (Rhizotrogus majalis), and Oriental beetle (Anomala orientalis), a member of the family Scarabaeidae, which in the larval stage feed on the roots of many plants and in the adult stage feed on the flowers, foliage and fruit of many plants.

(2) Areas Under Quarantine. The entire states of Alabama, Arkansas, Colorado, Connecticut, Delaware, Georgia, Illinois, Indiana, Iowa, Kansas, Kentucky, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Nebraska, New Hampshire, New Jersey, New Mexico, New York, North Carolina, Ohio, Oklahoma, Pennsylvania, Rhode Island, South Carolina, Tennessee, Texas, Vermont, Virginia, West Virginia, Wisconsin, the District of Columbia, the Provinces of Ontario, Quebec, and British Columbia, Canada, and any other state, territory or province where the presence of an established population of any of these insects is confirmed and effective eradication procedures have not been implemented. Any property(ies) in Oregon where Japanese beetles, European chafers, or Oriental beetles are found including a buffer zone that may be infested around the area where the pests were discovered.

(3) Commodities Covered. All life stages of the Japanese beetle, European chafer, and Oriental beetle, including eggs, larvae, pupae, and adults; and the following hosts or possible carriers of Japanese beetle:

(a) Soil, growing media, humus, compost, and manure (except when commercially packaged, and except soil samples under a federal Compliance Agreement);

(b) All plants with roots;

(c) Grass sod;

(d) Plant crowns or roots for propagation (except when free from soil and growing media; clumps of soil or growing media larger than 1/2 inch diameter will be cause for rejection);

(e) Bulbs, corms, tubers, and rhizomes of ornamental plants (except when free from soil and growing media; clumps of soil or growing media larger than 1/2 inch diameter will be cause for rejection); and

(f) Any other plant, plant part, article or means of conveyance when it is determined by the department to present a hazard of spreading live Japanese beetle due to either infestation, or exposure to infestation, by Japanese beetle.

(4) Restrictions. All commodities covered are prohibited entry into Oregon from the area under quarantine unless they have the required certification. Plants may be shipped from the area under quarantine into Oregon provided such shipments conform to one of the options below and are accompanied by a certificate issued by an authorized state agricultural official at origin. Note that not all protocols in the U.S. Domestic Japanese Beetle Harmonization Plan are acceptable for Oregon. Advance notification of regulated commodity shipment is required. The certifying official shall mail, FAX or e-mail a copy of the certificate to: Plant Program Area Director, Oregon Department of Agriculture, 635 Capitol Street NE, Salem, Oregon 97310, FAX: 503-986-4786, e-mail: quarantine@oda.state.or.us. The shipper shall notify the receiver to hold such commodities for inspection by the Oregon Department of Agriculture. The receiver must notify the Oregon Department of Agriculture of the arrival of commodities imported under the provisions of this quarantine and must hold such commodities for inspection. Such certificates shall be issued only if the shipment conforms fully with (a), (b), (c), (d), (e) or (f) below:

(a) Bareroot Plants. Plants with roots are acceptable if they are bareroot, free from soil and growing media (clumps of soil or growing media larger than 1/2 inch diameter will be cause for rejection). The certificate accompanying the plants shall bear the following additional declaration: "Plants are bareroot, attached clumps of soil or growing media are less than 1/2 inch in diameter." Advance notification required (see section 4 above).

(b) Production in an Approved Japanese Beetle Free Greenhouse/Screenhouse. All the following criteria apply. All media must be sterilized and free of soil. All stock must be free of soil (bareroot) before planting into the approved medium. The potted plants must be maintained within the greenhouse/screenhouse during the entire adult flight period. During the adult flight period the greenhouse/screenhouse must be made secure so that adult Japanese beetles can not gain entry. Security will be documented by the appropriate phytosanitary official. No Japanese beetle contaminated material shall be allowed into the secured area at any time. The greenhouse/screenhouse will be officially inspected by phytosanitary officials and must be specifically approved as a secure area. They shall be inspected by the same officials for the presence of all life stages of the Japanese beetle. The plants and their growing medium must be appropriately protected from subsequent infestation while being stored, packed and shipped. Certified greenhouse/screenhouse nursery stock may not be transported into or through any infested areas unless identity is preserved and adequate safeguards are applied to prevent possible infestation. Each greenhouse/screenhouse operation must be approved by the phytosanitary officials as having met and maintained the above criteria. The certificate accompanying the plants shall bear the following additional declaration: "The rooted plants (or crowns) were produced in an approved Japanese beetle free greenhouse or screenhouse and were grown in sterile, soilless media." Advance notification required (see section 4 above).

(c) Production During a Pest Free Window. The entire rooted plant production cycle will be completed within a pest free window, in clean containers with sterilized and soilless growing medium, i.e., planting, growth, harvest, and shipment will occur outside the adult Japanese beetle flight period, June through September. The accompanying phytosanitary certificate shall bear the following additional declaration: "These plant were produced outside the Japanese beetle flight season and were grown in sterile, soilless media." Advance notification required (see section 4 above).

(d) Application of Approved Regulatory Treatments. All treatments will be performed under direct supervision of a phytosanitary official or under compliance agreement. Treatments and procedures under a compliance agreement will be monitored closely throughout the season. State phytosanitary certificates listing and verifying the treatment used must be forwarded to Oregon via fax or electronic mail, as well as accompanying the shipment. Note that not all treatments approved in the U.S. Domestic Japanese Beetle Harmonization Plan are acceptable for Oregon. The phytosanitary certificate shall bear the following additional declaration: "The rooted plants are in soilless media and were treated to control Popillia japonica according to the criteria for shipment to category 1 states as provided in the U.S. Domestic Japanese Beetle Harmonization Plan and Oregon's Japanese beetle quarantine." Advance notification required (see section 4 above).

(A) Dip Treatment — B&B and Container Plants. Not approved.

(B) Drench Treatments — Container Plants Only. Not approved for ornamental grasses or sedges. Potting media used must be sterile and soilless, containers must be clean. Containers must be one gallon or smaller in size. Field potted plants are not eligible for certification using this protocol. This is a prophylactic treatment protocol targeting eggs and early first instar larvae. If the containers are exposed to a second flight season they must be retreated.

(i) Imidacloprid (Marathon 60WP). Apply one-half (0.5) gram of active ingredient per gallon as a prophylactic treatment just prior to Japanese beetle adult flight season (June 1, or as otherwise determined by the phytosanitary official). Apply tank mix as a drench to wet the entire surface of the potting media. A twenty-four (24) gallon tank mix should be enough to treat 120-140 one-gallon containers. Avoid over drenching so as not to waste active ingredient through leaching. During the adult flight season, plants must be retreated after sixteen (16) weeks if not shipped to assure adequate protection.

(ii) Bifenthrin (Talstar Nursery Flowable 7.9%). Mix at the rate of twenty (20) ounces per 100 gallons of water. Apply, as a drench, approximately eight (8) ounces of tank mix per six (6) inches of container diameter.

(C) Media (Granule) Incorporation — Container Plants Only. Containers must be one gallon or smaller in size. Not approved for ornamental grasses or sedges. All pesticides used for media incorporation must be mixed prior to potting

and plants potted a minimum of thirty (30) days prior to shipment. Potting media used must be sterile and soilless; containers must be clean. The granules must be incorporated into the media prior to potting. Field potted plants are not eligible for treatment. This treatment protocol targets eggs and early first instar larvae and allows for certification of plants that have been exposed to only one flight season after application. If the containers are to be exposed to a second flight season they must be repotted with a granule incorporated mix or retreated using one of the approved drench treatments. Pesticides approved for media incorporation are:

(i) Imidacloprid (Marathon 1 G). Mix at the rate of five (5) pounds per cubic yard.

(ii) Bifenthrin (Talstar Nursery Granular or Talstar T&O Granular (0.2G)). Mix at the rate of 25 ppm or one-third (0.33) of a pound per cubic yard based on a potting media bulk density of 200.

(iii) Tefluthrin (Fireban 1.5 G). Mix at the rate of 25 ppm based on a potting media bulk density of 400.

(D) Methyl Bromide Fumigation. Nursery stock: methyl bromide fumigation at NAP, chamber or tarpaulin. See the California Commodity Treatment Manual for authorized schedules.

(e) Detection Survey for Origin Certification. Japanese Beetle Harmonization Plan protocol not approved. Alternative approved protocol: States listed in the area under quarantine may have counties that are not infested with Japanese beetle. Shipments of commodities covered may be accepted from these noninfested counties if annual surveys are made in such counties and adjacent counties and the results of such surveys are negative for Japanese beetle. In addition, the plants must be greenhouse grown in media that is sterilized and free of soil and the shipping nursery must grow all their own stock from seed, unrooted cuttings or bareroot material. A list of counties so approved will be maintained by the Oregon Department of Agriculture. Agricultural officials from a quarantined state or province may recommend a noninfested county be placed on the approved county list by writing for such approval and stating how surveys were conducted giving the following information:

(A) Areas surveyed;

(B) How survey was carried out;

(C) Number of traps;

(D) Results of survey;

(E) History of survey;

(F) If county was previously infested, give date of last infestation. If infestations occur in neighboring counties, approval may be denied. To be maintained on the approved list, each county must be reapproved every twelve (12) months. Shipments of commodities covered from noninfested counties will only be allowed entry into Oregon if the uninfested county has been placed on the approved list prior to the arrival of the shipment in Oregon. The certificate must have the following additional declaration: "The plants in this consignment were produced in sterile, soilless media in (name of county), state of (name of state of origin) that is known to be free of Japanese beetle." Advance notification required (see section 4 above).

(f) Privately owned house plants obviously grown, or certified at the place of origin as having been grown indoors without exposure to Japanese beetle may be allowed entry into this state without meeting the requirements of section (4). Contact the Oregon Department of Agriculture for requirements: Plant Program Area Director, Oregon Department of Agriculture, 635 Capitol Street NE, Salem, Oregon 97301, telephone: 503/986-4644, FAX: 503/986-4786, e-mail: quarantine@oda.state.or.us.

(g) Infested properties in Oregon: Confirmation of an infestation of Japanese beetle, European chafer, or Oriental beetle must be made by the ODA or an official cooperator. ODA will notify the property owner(s) and develop a response plan.

The goal of the plan will be eradication as soon as possible. The plan may require cooperative measures by the property owner(s) to supplement measures taken by ODA.

(5) Exceptions. Upon written request, and upon investigation and finding that unusual circumstances exist justifying such action, the department may issue a permit allowing entry into this state of commodities covered without meeting the requirements of section (4). However, all conditions specified in the permit shall be met before such permit will be recognized.

(6) Violation of Quarantine. All covered commodities described in section (3) of this rule found to be in violation of this quarantine shall be returned immediately to point of origin by the Oregon receiver, or at the owner's option be destroyed under the supervision of the department, without expense to or indemnity paid by the department. Violation of this quarantine may result in a fine, if convicted, of not less than $500 nor more than $5,000, as provided by ORS 561.990(4). Violators may also be subject to civil penalties of up to $10,000 as provided by Oregon Laws 1999, chapter 390, section 2; nursery license suspension or nursery license revocation.

Stat. Auth.: ORS 561.020, 561.190, 561.510 & 570.305
Stats. Implemented: ORS 561.510
Hist.: AD 12-1977, f. 6-6-77, ef. 6-20-77; AD 7-1988(Temp), f. & cert. ef. 8-2-88; DOA 10-1998, f. & cert. ef. 12-30-98; DOA 27-2000, f. & cert. ef. 10-13-00; DOA 9-2006, f. & cert. ef. 3-22-06; DOA 7-2008, f. & cert. ef. 2-8-08; DOA 4-2010, f. & cert. ef. 1-28-10; DOA 3-2013, f. & cert. ef. 3-1-13

http://arcweb.sos.state.or.us/pages/rules/oars_600/oar_603/603_052.html

Appendix 3: Economic Risk Analysis

Economic Risk Analysis: Oregon and the Japanese Beetle (*Popillia japonica*)

Name: Japanese Beetle, *Popillia japonica* (Newman)
Origin, biology, hosts: Native to Japan, introduced into U.S. (New Jersey) in 1916; now in most eastern states; one generation per year; larvae feed on grass roots; adults feed on over 300 species of plants (e.g., roses, fruit trees, grapes)

RISK RATING SUMMARY
Relative Risk rating: VERY HIGH
Numerical Score: 9 (on a 1-9 scale)
Uncertainty: LOW

RISK RATING DETAILS

- **Establishment Potential: HIGH**
  Oregon's climate and host plant distribution are ideal for Japanese beetle establishment.
- **Spread Potential: HIGH**
  Since its introduction in 1916 in New Jersey, Japanese beetles have become established in half of the 48 contiguous states. Nursery stock, commercial cargo airplanes, and long-haul trucks are major pathways of introduction.
- **Environmental Impact Potential: LOW**
  Many Japanese beetle hosts occur in Oregon's natural environment. Himalayan blackberry, a known favorite host plant, is abundant. Potential impacts to native species such as bigleaf maple, salmonberry, and native grasses are difficult to predict, but could be significant.
- **Economic Impact Potential: HIGH**
  Oregon has a number of susceptible hosts that are of economic significance (see Table):

Oregon Crop/Commodity	Bearing or Harvested Acreage	Production Value	Estimated Crop Damage Costs[a]	Estimated Quarantine Costs	Total Economic Impact
Nurseries (B & B, Container, Greenhouse)	61,099[b]	805,000,000[b]	12,880,000	3,477,600[f]	16,357,600
Grapes	19,000	118,320,000	1,893,120	151,450[g]	2,044,570
Hops	5,410	35,679,000	570,864	45,669[g]	616,533
Cannabis	?	361,000,000[d]	5,776,000	Not Applicable	5,776,000
Caneberries	9,000	70,789,000	1,132,624	90,610[g]	1,223,234
Blueberries	9,000	102,325,000	1,637,200	130,976[g]	1,768,176
Pears (all varieties)	14,400	127,392,000	2,038,272	163,062[g]	2,201,334
Sweet cherries	12,500	82,709,000	1,323,344	105,867[g]	1,429,211
Apples	5,100	43,269,000	692,304	55,384[g]	747,688
Snap beans/process	8,500	13,940,000	223,040	17,843[g]	240,883
Grasses (turf)	418,550	449,018,000	7,184,288	574,743[g]	7,759,031
Golf Courses	8,550[c]	336,400,000[e]	5,382,400	Not Applicable	5,382,400
Total	**571,109**	**2,545,841,000**	**34,957,456**	**4,813,204**	**45,546,660**

Appendix 4: Informal Environmental Assessment

An informal environmental assessment of an eradication project for Japanese beetle in Cedar Mill and Bethany, Washington County, Oregon

The Oregon Department of Agriculture (Plant Protection and Conservation Programs, Insect Pest Prevention and Management Program) is proposing an eradication project for the Japanese beetle (*Popillia japonica* Newman) in the Cedar Mill and Bethany neighborhoods in Washington County, Oregon. A single application of Acelepryn®G will be applied in April or May 2017 to turf, grasses, and lawns within the proposed 1,000-acre treatment area.

This document is an informal environmental assessment of the effects of the proposed treatment program to eradicate the Japanese beetle from the Cedar Mill and Bethany areas, Washington County. While a formal environmental assessment is not legally required for this project, our goal is to provide accurate and complete information on possible impacts of the Acelepryn®G application. This assessment is focused on any Threatened and Endangered (T & E) species that may occur in the area, and any other species that may be affected by the treatment.

Chlorantraniliprole (Acelepryn®G) is classified as a reduced risk pesticide with no signal word required. Signal words are required for all registered pesticide products unless the pesticide is below defined toxicological exposure limits. People applying this pesticide only need limited protective equipment such as wearing a shirt, pants, socks, and shoes.

In 2014, the EPA determined with reasonable certainty that no harm will result to the general population or to infants and children from exposure to chlorantraniliprole residues. EPA reaffirmed this in September 2016. EPA determined that no harm is expected from exposure to chlorantraniliprole from skin contact or by incidental ingestion by children/toddlers over the short and intermediate term. To exceed EPA's maximum acceptable daily dose for chlorantraniliprole, a toddler would need to eat more than 4 pounds of treated soil daily. EPA has determined that chlorantraniliprole is neither genotoxic (damaging to genetic material like DNA); neurotoxic (damaging to the nervous system); nor immunotoxic (damaging to the immune system). EPA has determined it is neither carcinogenic (i.e. doesn't cause cancer) nor teratogenic (i.e. doesn't cause birth defects). EPA has determined it does not cause skin irritation nor is it a skin sensitizer. No known reports of hypersensitivity (allergy) to chlorantraniliprole have been made to EPA.

Locally, the Oregon Health Authority (OHA) can answer questions about the potential effects on humans from Acelepryn®G. Questions about human health are also provided on this website: http://public.health.oregon.gov/HealthyEnvironments/HealthyNeighborhoods/Pesticides/Pages/Chlorantraniliprolef andf Yourf Healthf FAQs.aspx

Ecological Impacts

The active ingredient in Acelepryn®G is chlorantraniliprole. When the product is used as directed, it does not pose a hazard to humans or domestic animals. However, it is toxic to aquatic invertebrates, oysters, and shrimp. It will not be applied directly to water in this treatment. No buffers are required around water, but care will be taken to not apply the product to any water bodies, including Willow Creek.

Target pests affected by Acelepryn®G include white grubs in the beetle family Scarabaeidae, such as Japanese beetle, *Aphodius* spp., Asiatic garden beetle, black turfgrass ataenius, European chafer, green June beetle, May/June beetle (*Phyllophaga* spp.), northern masked chafer, oriental beetle, and southern masked chafer. It is also effective against billbugs, European crane fly, and turf caterpillars, including armyworms, cutworms, and sod worms.

Nontarget species (e.g., birds, mammals, amphibians, reptiles, and other insects) should not be affected by the proposed Acelepryn®G treatment. Chlorantraniliprole (Acelepryn®G), represents a relatively new class of insecticides called anthranilic diamides (Cordova et al. 2006). In contrast to neonicotinoids, Acelepryn®G does not adversely affect bee colonies, even when the workers forage on flowering clover that has been directly sprayed (Larson and Potter 2013). Aquatic species, including frogs, should not be adversely affected. Adult frogs can be found in more terrestrial settings, but are usually close to a water source where egg laying and development occur. An adult frog may hop over an area where Acelepryn®G has been applied. If it has already been irrigated into the ground, the risk should be low. Butterflies and moths should not be affected by the treatment, as it is applied to the ground and only affects ground-dwelling immature insects, not adults.

Reports from the US Fish & Wildlife Service indicate that this proposed treatment area is outside any critical habitats for Northern spotted owl, streaked horned lark, and Fender's blue butterfly. Migratory bird species should not be affected at all, and bird species that feed on the ground should not exceed a Level of Concern (LOC), as determined by the Environmental Protection Agency (EPA).

A report from the Oregon Biodiversity Information Center indicates that only one listed species, the Pacific lamprey, may potentially occur in Bronson Creek in the northwest corner of the proposed treatment area. The lamprey is considered threatened or endangered in Oregon, but is more common elsewhere. Because the proposed treatment will not be applied directly to water it will not affect aquatic habitats and will not harm lamprey or fish that may be in the creek. See the following Frequently Asked Questions for further information about this topic.

References

Cordova et al. 2006. Anthranilic diamides: A new class of insecticides with a novel mode of action, ryanodine receptor activation. Pesticide Biochemistry and Physiology 84:196f 214.
Larson, J. and D. Potter. 2013. Beef friendly lawn care. Landscape Management.

Japanese Beetle Insecticide FAQs

Contact Us

Pesticide Exposure Safety and Tracking (PEST) Program

What are Japanese Beetles?

Japanese beetle (JB) are insect pests that feed on a variety of turf, trees, vines, and ornamental plants. "Adults are oval, metallic green with bronze-colored wings, and are about 1/2" long. Males are slightly smaller than females. Adults have six white tufts of hair along each side of the body. Grubs are creamy white, C-Shaped, and 1" long when fully grown. Adults are found clustered together on plants and grubs can be clumped under the soil of turfgrass." (Resource: Utah Pest Fact Sheet)

In their larval stage (grubs), JB eat grass roots. As adults JB feed on foliage or fruits of 300 different plant species. Plants especially preferred by JB include American elm, rose bushes, and raspberry bushes. When feeding, the adults release a special pheromone or scent that attracts other adults. Those beetle clusters can completely consume a fruit or vegetable on which they are feeding.

At present, JB occurs throughout most of the Eastern United States. Many states west of the Mississippi River, including Oregon, are uninfested. Because of potential damage to Oregon's agricultural products and residential plants (like lawn and roses), the Oregon Department of Agriculture (ODA) conducts surveys with baited traps each year to detect JB infestations.

When a JB infestation is found in Oregon, ODA treats that area with an insecticide, like Acelepryn G, to kill the JB grubs as soon as they begin feeding on plant roots in the area.

What is Acelepryn G®?

Acelepryn G® (EPA Registration No. 100-1500) is a pesticide product that contains 0.2% chlorantraniliprole as its active ingredient.

Chlorantraniliprole is classified by the U.S. Environmental Protection Agency (EPA) as a "Reduced Risk" pesticide. This means that chlorantraniliprole poses a lower risk to human health and the environment than other pesticides allowed for the same uses.

The harm that a pesticide can cause humans and animals is known as toxicity. EPA has determined that Acelepryn G® falls into a low toxicity category by all routes of exposure. Eating, breathing, skin and eye contact are considered exposure routes. This means that, unlike with many other pesticides, EPA does not require Acelepryn G® to have a **signal word** (DANGER, WARNING, or CAUTION) on its package.

What is chlorantraniliprole?

Chlorantraniliprole is the main or active ingredient in the pesticide Acelepryn G®.

It belongs to the anthranilic diamide group of **insecticides**. When eaten by insects, chlorantraniliprole interrupts the normal activity of their muscles, resulting in death.

What about the 'other' or so-called inert ingredients in Acelepryn G®?

While chlorantraniliprole, the active ingredient in Acelepryn G®, is just 0.2% of the product, there are often concerns about other ingredients in the remaining 99.8%. While manufacturers are not required to list these on the label, EPA does regulate them.

Read more at: **http://npic.orst.edu/ingred/inert.html**.

When evaluating Acelepryn G®, EPA looked at the whole product, including the other ingredients. EPA determined that all of Acelepryn G® was of very low toxicity, and did not need a **signal word** (DANGER, WARNING, or CAUTION). This means that the whole product falls into the EPA's lowest toxicity category by all routes of exposure (oral, dermal, inhalation, and other effects like eye and skin irritation).

When will chlorantraniliprole be applied in my neighborhood? How will it be done?

During the months of April and May 2017, pesticide applicators working with ODA will apply the insecticide Acelepryn G® to eradicate an infestation of JB.

Acelepryn G® will be applied with hand-held spreaders. These are often used by homeowners to spread seed or dry fertilizer in their yards.

The treatment area is a 1000-acre area in Cedar Mill, outside of Portland. Visit **http://www.japanesebeetlepdx.info/treatment.html** for application details. Acelepryn G® comes in a dry, granular form. It looks like light, brown granules that are 1/16" to 1/8" (1-2mm) in size. Once ODA has spread Acelepryn G® in affected areas, ODA will request that granules be watered into the ground by residents right after the application.

What should I do before, during and after the application of Acelepryn G® to my property?

As a precaution, you can take the following steps:

- Stay indoors (and keep pets indoors) during application to your property. Immediately after the granules have been spread, residents are to spray them with water, as directed by ODA. This allows the granules to break down and become absorbed into the turf or soil.
- Keep children and pets off the treated area as long as granules are still visible. Inspect walkways and patios, and sweep-up or pick up stray granules (after putting on gloves). Granules are supposed to be watered in, as instructed by ODA. Keep off of the treated area until the granules are completely watered in and the lawn has dried.
- Wash exposed skin with soap and water if direct contact with the granules occurs.
- If you feel sick or have symptoms following exposure, contact your healthcare provider or the Oregon Poison Center at 1-800-222-1222 for further medical advice.

Learn about additional ways to avoid exposure: **http://npic.orst.edu/factsheets/MinimizingExposure.html**.

How might I be exposed to chlorantraniliprole?

Direct exposure (inhaling, swallowing, or experiencing contact on the skin or eyes) to chlorantraniliprole is unlikely.

The application procedure from EPA requires that Acelepryn G® granules be watered into the ground immediately after they are applied. Water causes the granules break down and become absorbed by the surrounding soil.

No spray mist will occur with the application of Acelepryn G®.

As a precaution, you can take the steps listed **below**, particularly for children and pets.

Can chlorantraniliprole make people sick?

It is unlikely that even direct exposure to chlorantraniliprole, when used according to directions on the Acelepryn G®'s label, will result in adverse health effects to humans or animals.

In 2014, EPA determined with reasonable certainty that no harm will result to the general population, or to infants and children from exposure to chlorantraniliprole residues. EPA reaffirmed this in September 2016. EPA determined that no harm is expected from exposure to chlorantraniliprole from skin contact or by incidental ingestion by children/toddlers over the short and intermediate-term. In fact, to exceed EPA's maximum acceptable daily dose for chlorantraniliprole, a toddler would need to eat more than 4 pounds of treated soil daily.

EPA has determined that chlorantraniliprole is neither genotoxic (damaging to genetic material like DNA); neurotoxic (damaging to the nervous system); nor immunotoxic (damaging to the immune system). EPA has determined it is neither carcinogenic (i.e. doesn't cause cancer) nor teratogenic (i.e. doesn't cause birth defects). EPA determined it does not cause skin irritation nor is it a skin sensitizer. No known reports of hypersensitivity (allergy) to chlorantraniliprole have been made to EPA.

To understand its effects on mammals (including people), toxicity studies of chlorantraniliprole were done on mice. At very high daily doses over 1.5 years, some changes in liver cells and increase liver weights were observed in some male (but not female) mice. Moderate doses below this level were also tested. These liver changes were not observed at lower doses. The amount of chlorantraniliprole that people could be exposed to from the applications of Acelepryn G® to eradicate JB is far lower than the amount that caused these effects in mice.

As of December 1, 2016, OHA's Pesticide Exposure Safety & Tracking Program has never received a case of pesticide poisoning involving chlorantraniliprole.

Can chlorantraniliprole make animals sick?

It is unlikely that even direct exposure to chlorantraniliprole, when used according to directions on the Acelepryn G®'s label, will result in adverse health effects to humans or animals.

To understand its effects on mammals, toxicity studies of chlorantraniliprole were done on mice. At very high daily doses over 1.5 years, some changes in liver cells and increase liver weights were observed in some male (but not female) mice. Moderate doses below this level were also tested. These liver changes were not observed at lower doses. The amount of chlorantraniliprole that people could be exposed to from the applications of Acelepryn G® to eradicate JB is far lower than the amount that caused these effects in mice.

As a precaution, residents should not allow animals in the treated areas immediately after treatment. Wait until the material has soaked into lawn before entering into the treated area. For those wishing to take extra caution, wait 24 hours after treatment before entering the treated area.

Can the treatment affect the safety of food grown/raised on my property?

Chlorantraniliprole, the active ingredient in Acelepryn G®, is categorized by EPA as a "reduced risk" pesticide when used on turf as it has low impact on human health and on the health of non-target organisms (e.g., birds, fish, plants).

EPA has allowed chlorantraniliprole to be registered for use on food crops such as peaches, plumes and artichokes. Based on EPA's assessment of these food uses, the risk to the general population from consumption of home garden fruits and vegetables near Acelepryn G® applications is expected to be hundreds to thousands of times below a level of concern.

When Acelepryn G® is applied only to turf, ground-cover, and ornamental plants, it is unlikely that chlorantraniliprole would be found on fruits and vegetables. However, water flowing over the ground soon after application can move some of the pesticide to unexpected areas, such as a garden. Once there, chlorantraniliprole can be taken up by plants. **The National Pesticide Information Center has guidance on minimizing pesticide residues in food.**

Can I plant a garden next year in areas that were treated this year?

As a precaution, avoid planting vegetables or herbs directly into the treated soil for one year.

This is due to the possibility that residue could be taken up into plants since it lasts in the soil for many months. However, the risk to the general population from consumption of home garden fruits and vegetables grown in soil one year following Acelepryn G® application is expected to be hundreds to thousands of times below a level of concern. **The National Pesticide Information Center has guidance on minimizing pesticide residues in food.**

Can chlorantraniliprole get into my drinking water?

Most if not all residents in the treatment area get their drinking water from the City of Portland water system. The Acelepryn G® application will not penetrate the pipes bringing drinking water directly from the City of Portland into your home.

The use of this chemical in areas where soils allow water to move easily, particularly where the water table is shallow, may result in ground-water contamination. If you have a domestic drinking water well, contamination of your drinking water would depend on the depth of the well, the aquifer it draws from, and characteristics of the soils around the well. Any amount of chlorantraniliprole reaching ground water through time is likely to be well below the level that could cause harm.

What if I have more questions?

If you have been exposed to Acelepryn G® and you have concerns about possible health effects, wash the affected area with soap and water and contact the Oregon Poison Center at 1-800-222-1222.

For non-urgent questions on Acelepryn G® or chlorantraniliprole, contact the EPA-funded National Pesticide Information Center (NPIC), based at Oregon State University, by phone 1-800-858-7378 (M-F, 8AM-12PM) or email **npic@ace.orst.edu**.

You can learn more about pesticides on NPIC's website **http://npic.orst.edu**.

For general information about applications of Acelepryn G®, planned for mid-April to May 2017, please contact Oregon Department of Agriculture's (ODA) Plant Protection and Conservation Programs staff at 1-800-525-0137 (Mon. – Fri., 8AM – 5PM) or by email: **japanesebeetle@oda.state.or.us**.

For more information on JB, visit: **http://www.japanesebeetlepdx.info**.

To learn more about the Oregon Department of Agriculture's invasive species program visit: **http://www.oregon.gov/ODA/programs/IPPM/SuppressionEradication/Pages/SuppressionEradication.aspx**.

GROUP 28 INSECTICIDE

Not for Sale, Sale Into, Distribution and/or Use in Nassau, Suffolk, Kings, Queens Counties of New York State.

Acelepryn®

Insecticide

For foliar and systemic control of white grubs and other listed pests infesting landscape and recreational turfgrass (including golf courses) as well as landscape ornamentals, interior plantscapes and sod farms.

EPA Est. No. 46073-TN-003[NTM]
EPA Est. No. 072344-MO-004[TRR]
(Superscript is first three letters of batch code on container)
EPA Reg. No. 100-1489

Active Ingredient:	
Chlorantraniliprole* 3-bromo-*N*-[4-chloro-2-methyl-6-[(methylamino)carbonyl]phenyl]-1-(3-chloro-2-pyridinyl)-1*H*-pyrazole-5-carboxarmide	18.4%
Other Ingredients	81.6%
Total:	100.0%

*Chlorantraniliprole belongs to the anthranilic diamide chemical class.

Product of USA

KEEP OUT OF REACH OF CHILDREN

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.)

SCP 1489A-L1B 0414

FIRST AID

HOT LINE NUMBER
For 24-Hour Medical Emergency Assistance
(Human or Animal)
or Chemical Emergency Assistance
(Spill, Leak, Fire, or Accident),
Call
1-800-888-8372

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

When used as directed this product does not present a hazard to humans or domestic animals.

Personal Protective Equipment

Applicators and other handlers must wear:

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

After the product has been diluted in accordance with label directions for use, shirt, pants, socks, and shoes are sufficient Personal Protective Equipment (PPE). Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables are available, 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.
- Remove clothing immediately if pesticide gets inside.
- Then wash thoroughly and put on clean clothing.

Environmental Hazards

This pesticide is toxic to aquatic invertebrates, oysters and shrimp. Do not apply directly to water. Drift and runoff may be hazardous to aquatic organisms in water adjacent to use sites.

Surface Water Advisory

This product may impact surface water quality due to runoff of rain water. This is especially true for poorly draining soils and soils with shallow ground water. This product is classified as having a high potential for reaching surface water via runoff for several months or more after application. A level, well-maintained vegetative buffer strip between areas to which this product is applied and surface water features such as ponds, streams, and springs will reduce the potential loading of chlorantraniliprole from runoff water and sediment. Runoff of this product will be reduced by avoiding applications when rainfall is forecasted to occur within 48 hours.

Ground Water Advisory

This chemical has properties and characteristics associated with chemicals detected in ground water. This chemical may leach into ground water if used in areas where soils are permeable, particularly where the water table is shallow.

DIRECTIONS FOR USE

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

- Not for use on plants being grown for sale or other commercial use, or for commercial seed production.

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 (sod farms included), 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 the label about personal protective equipment, restricted-entry interval, and notification to workers (as applicable).

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 State or Tribal agency responsible for pesticide regulation.

Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 4 hours.

For early entry into 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, wear:

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

NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are not within the scope of the Worker Protection Standard for agricultural pesticides, 40 CFR part 170. The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

Professional applications to golf courses, residential, industrial and commercial lawns and sports fields are not within the scope of the Worker Protection Standard. Do no enter or allow others to enter the treated area until sprays have dried.

Acelepryn® must be used only in accordance with specifications on this label or in separate Syngenta supplemental labeling that may be made temporarily available through local distributors, as a result of new EPA approvals. Syngenta will not be responsible for losses or damages resulting from the use of this product in any manner not specifically stated on this label or other labels or bulletins published by Syngenta. User assumes all risks associated with such non-specified uses.

PRODUCT INFORMATION

Acelepryn is a suspension concentrate that may be applied for the control of white grubs and other listed pests infesting landscape and recreational turfgrass (including golf courses) as well as caterpillars, clearwing moth borers and other pests of landscape ornamentals including trees, shrubs, foliage plants, flowers and non-bearing fruit and nut trees that will not produce fruit or nuts during the season of application.

Acelepryn may be used on plants or turfgrasses that are being grown for aesthetic or recreational purposes or climatic modification in or around home lawns, residential dwellings, business and office complexes, shopping complexes, multi-family residential complexes, institutional buildings, airports, cemeteries, interior plantscapes, ornamental gardens, wildlife plantings, parks, playgrounds, schools, day-care facilities, golf courses (tee box areas, roughs, fairways, greens, collars etc.), athletic fields, other landscaped areas, and sod farms.

Acelepryn is in GROUP 28 of the EPA's Insecticide and Acaricide Groups Based on Target Site of Action (EPA PR Notice 2001-5) and may be used in rotational resistance management programs.

Acelepryn must be diluted with water before application.

Consult your local Syngenta Professional Products representative, Cooperative Extension Service specialist or pest control advisor for regionally specific information regarding application timing.

APPLICATION TIMING

White Grubs: Apply Acelepryn from early April to early September for preventative and early curative control of all the major white grub species infesting turfgrass. The need for an application may be based on historical monitoring of the site, previous records or experiences, current season adult trapping or other methods. The higher rate listed for white grub control in Table 1 may be required [for early season (April and May) applications where a long residual is required or] in late August or early September when less sensitive mid-instar grubs are present at the time of application. Irrigate turf immediately after application or allow rainfall to move the product into the soil.

Annual Bluegrass Weevil: Apply Acelepryn when overwintered adult annual bluegrass weevils are observed in late April or early May to prevent damage from first generation larvae in late-May and June. An application of Acelepryn at this time will also provide excellent white grub control. The higher rates listed in Table 1 may be required for applications made after mid-May.

Billbugs: Apply Acelepryn when overwintered adult billbugs are first observed. This will usually occur in late April or early May in regions with cool-season turfgrasses. An application of Acelepryn at this time will also provide excellent white grub control. The higher rates listed in Table I may be required for applications made after early May or when billbug species other than bluegrass billbug are present.

Chinch Bugs: For suppression of chinch bugs, apply Acelepryn before eggs hatch.

European Crane Fly: Apply Acelepryn between September and November to control European crane fly larvae in turfgrass. The higher rate listed in Table 1 may be required to achieve control when applications are made in November.

Spittlebugs: Acelepryn will provide control of two-lined spittlebug when applications are made in spring or summer.

Turf Caterpillars: Acelepryn will provide excellent curative caterpillar control in turfgrass. To ensure optimum control, delay watering (irrigation) or mowing for 24 hours after application. If the area being treated is maintained at a mowing height of greater than one inch, then the higher rate listed in Table 1 may be required during periods of high pest pressure.

APPLICATION RATES FOR LAWNS, GOLF COURSES AND OTHER RECREATIONAL TURFGRASS AREAS

For maximum residual effectiveness or for optimal control of large pest infestations, apply Acelepryn at up to 24 fluid ounces per acre (= 0.55 fluid ounces per 1,000 square feet or 0.313 lb AI/A) to control any of the pests listed below. Apply Acelepryn in sufficient water to provide optimal distribution in the treated area. Use properly calibrated application equipment that will produce a uniform, coarse droplet spray, using a low pressure setting to eliminate off target drift. Restriction: Do not apply more than 38.3 fluid ounces (equivalent to 0.5 lb of active ingredient) of product per acre per year in broadcast applications to turfgrass.

TABLE 1: Turf Application Rates

Target Pest	Acelepryn Turf Application Rates		
	Product (fl oz) per Acre	Product (fl oz) per 1,000 Square Feet	Lb AI/A
Turf Caterpillars (including armyworms, cutworms and sod webworms)	2 to 4	0.046 to 0.092	0.026 to 0.052
White Grubs (including Aphodius spp., Asiatic garden beetle, black turfgrass ataenius, European chafer, green June beetle, Japanese beetle, May/June beetles (Phyllophaga spp.), northern masked chafer, oriental beetle and southern masked chafer)	8 to 16	0.184 to 0.367	0.104 to 0.208
European Crane Fly	8 to 16	0.184 to 0.367	0.104 to 0.208
Billbugs	8 to 20	0.184 to 0.46	0.104 to 0.26
Annual bluegrass weevil	12 to 20	0.275 to 0.46	0.157 to 0.26
Spittlebugs	12 to 20	0.275 to 0.46	0.157 to 0.26
Chinch bugs (suppression only)	8 to 20	0.184 to 0.46	0.104 to 0.26

TABLE 2: Turf Application Dilution Chart

Application Volume (Gallons per 1,000 Square Feet)	Turf Application Rates			Fluid ounces of Acelepryn diluted to these volumes of finished spray			
	Product (fl oz) per Acre	Product (fl oz) per 1,000 sq ft	lb AI/A	1 gallon	5 gallons	10 gallons	100 gallons
1	1	0.023	0.013	0.023	0.115	.023	2.3
	2	0.046	0.026	0.046	0.23	0.46	4.6
	4	0.092	0.052	0.092	0.46	0.92	9.2
	8	0.184	0.104	0.184	0.92	1.84	18.4
	16	0.367	0.208	0.367	1.84	3.67	36.7
	20	0.46	0.26	0.46	2.3	4.6	46.0
	24	0.55	0.313	0.55	2.76	5.5	55.0
2	1	0.023	0.013	0.0115	.0.58	0.115	1.15
	2	0.046	0.026	0.023	0.115	0.23	2.3
	4	0.092	0.052	0.046	0.23	0.46	4.6
	8	0.184	0.104	0.092	0.46	0.92	9.2
	16	0.367	0.208	0.184	0.92	1.84	18.4
	20	0.46	0.26	0.23	1.15	2.3	23.0
	24	0.55	0.313	0.275	1.38	2.75	27.5
3	1	0.023	0.013	0.0077	0.039	0.077	0.77
	2	0.046	0.026	0.015	0.077	0.15	1.5
	4	0.092	0.052	0.03	0.154	0.3	3.0
	8	0.184	0.104	0.06	0.308	0.6	6.0
	16	0.367	0.208	0.123	0.616	1.23	12.3
	20	0.46	0.26	0.153	0.77	1.53	15.3
	24	0.55	0.313	0.184	0.92	1.84	18.4
4	1	0.023	0.013	0.0058	0.029	0.058	0.58
	2	0.046	0.026	0.0115	0.058	0.115	1.15
	4	0.092	0.052	0.023	0.116	0.23	2.3
	8	0.184	0.104	0.046	0.23	0.46	4.6
	16	0.367	0.208	0.092	0.46	0.92	9.2
	20	0.46	0.26	0.115	0.58	1.15	11.5
	24	0.55	0.313	0.138	0.7	1.38	13.8
5	1	0.023	0.013	0.0046	0.023	0.046	0.46
	2	0.046	0.026	0.0092	0.046	0.092	0.92
	4	0.092	0.052	0.0184	0.092	0.184	1.84
	8	0.184	0.104	0.037	0.184	0.37	3.7
	16	0.367	0.208	0.074	0.368	0.74	7.4
	20	0.46	0.26	0.092	0.46	0.92	9.2
	24	0.55	0.313	0.11	0.55	1.1	11.0
10	1	0.023	0.013	0.0023	0.0115	0.023	0.23
	2	0.046	0.026	0.0046	0.023	0.046	0.46
	4	0.092	0.052	0.0092	0.046	0.092	0.92
	8	0.184	0.104	0.0184	0.092	0.184	1.84
	16	0.367	0.208	0.0367	0.184	0.367	3.67
	20	0.46	0.26	0.046	0.23	0.46	4.6
	24	0.55	0.313	0.55	0.276	0.55	5.5

- To convert from fluid ounces to milliliters, multiply by 29.57.
- 1 fluid ounce = 29.57 ml = 2 tablespoons = 6 teaspoons
- Do not use household utensils to measure Acelepryn

APPLICATION RATES FOR ORNAMENTAL PLANTS (EXTERIOR LANDSCAPES AND INTERIOR PLANTSCAPES)

Foliar Applications:

Acelepryn mixes readily with water and may be applied with many types of application equipment. Foliar treatment application rates are listed in Table 3. Mix the appropriate amount Acelepryn with the required amount of water and apply as a full coverage foliar spray to control the selected target pest. Foliar applications offer locally systemic activity against insect pests. Repeat treatment as necessary to maintain control using higher application rates as pest pressure and foliage area increases. Repeat applications must be limited to no more than once per seven days. Certain plant species or cultivars may be sensitive to the final spray solution. If local experience is not available, then a small number of plants should be treated and observed for phytotoxicity for at least one week before making an application to the entire planting. When making foliar applications to hard-to-wet foliage such as holly, pine, or ivy, the addition of a spreader/sticker is recommended. If concentrate or mist type spray equipment is used, an equivalent amount of product should be used on the area sprayed, as would be used in a dilute application. For outdoor landscape ornamentals, broadcast applications cannot exceed a total of 38.3 fluid ounces (equivalent to 0.5 lb of active ingredient) of product per acre per year.

TABLE 3: Foliar Ornamental Application Rates

Acelepryn Ornamental Foliar Application Rates					
Target Pests	Product (fl oz) per 100 Gallons	Lb AI per 100 Gallons	PPM	Percent AI (wt/vol)	Maximum Gallons per Acre per Year
Leaf-feeding caterpillars (such as bagworms and tussock moth caterpillars [including whitemarked tussock moth])	1	0.013	15.6	0.00156	3840
	2	0.026	31.3	0.00313	1920
	4	0.052	62.5	0.0625	960
	8	0.104	125	0.0125	480
For maximum residual control of the pests listed above	16	0.208	250	0.025	240

Soil Applications:

Acelepryn is a systemic product and will be translocated upward into the plant from root uptake. Soil treatment application rates are listed in Table 4. To assure optimum effectiveness, the product must be placed where the growing portion of the target plant can absorb the active ingredient. For this reason, basal application within one to three feet of the root flare of trees and shrubs is recommended. Application can be made by soil injection, soil drenches and broadcast sprays. When making soil applications to plants with woody stems, systemic activity will be delayed until the active ingredient is translocated throughout the plant. In some cases, this delay could be 60 days or longer. For this reason, applications should be made prior to anticipated pest infestation to achieve optimum levels of control.

TABLE 4: Ornamental Soil Treatment Application Rates

Target Pests	Trees: Amount per inch of diameter (DBH)		Shrubs: Amount per foot of height	
	Product (fl oz)	Lb AI	Product (fl oz)	Lb AI
Lace bugs Aphids, including apple aphid	0.0625	0.0008	0.0625	0.0008
	0.125	0.0016	0.125	0.0016
	0.25	0.0032	0.25	0.0032
Birch leafminer	0.25	0.0032	0.25	0.0032

The calculations for soil injection/drench applications of Acelepryn involve five easy steps:

Step 1: Calibrate the application equipment to determine its flow rate in gallons per minute.

Step 2: Select an injection volume per inch of tree diameter at breast height (DBH) or foot of shrub height.

Step 3: Refer to the Table 5 below to determine the amount of time that is required to deliver the desired volume per injection site. The example highlighted in Table 5 shows that 10 seconds are required per inch of tree DBH or foot of shrub height when injecting 1 quart of solution per site using a flow rate of 1.5 gallons per minute.

Step 4: Determine how much solution to mix.

Step 5: Refer to the Table 6 below to determine the amount of Acelepryn that must be mixed in the desired volume of water based on the injection volume identified above. The example highlighted in Table 6 shows that 25 fluid ounces of Acelepryn must be mixed in 50 gallons of water when applying 0.125 fluid ounces of product per inch of DBH or foot of shrub height using one quart of solution per inch of DBH or foot of shrub height.

TABLE 5: Ornamental Soil Treatment Application Calibration Chart

Volume per Site*	Flow Rate (Gallons per minute)					
	0.5 gallon	0.75 gallon	1.0 gallon	1.5 gallons	2.0 gallons	3.0 gallons
1 pint	15.0 sec	10.0 sec	7.5 sec	5.0 sec	3.75 sec	2.5 sec
1 quart	30.0 sec	20.0 sec	15.0 sec	10.0 sec	7.5 sec	5.0 sec
2 quarts	1.0 min	40.0 sec	30.0 sec	20.0 sec	15.0 sec	10.0 sec
1 gallon	2.0 min	1 min 20 sec	1.0 min	40.0 sec	30.0 sec	20.0 sec

* Site = Soil injection site – the selected volume is applied per inch of tree DBH or foot of shrub height.

TABLE 6: Ornamental Soil Treatment Application Mixing Chart

Volume per Site*	Application Rate (fl oz)[1]	Product (fl oz) per 100 Gallons	Product (fl oz) per 50 Gallons	Product (fl oz) per 25 Gallons	Product (fl oz) per 10 Gallons	Product (fl oz) per 1 Gallon
1 pint	0.0625	50	25	12.5	5	0.5
	0.125	100	50	25	10	1
	0.25	200	100	50	20	2
1 quart	0.0625	25	12.5	6.25	2.5	0.25
	0.125	50	25	12.5	5	0.5
	0.25	100	50	25	10	1
2 quarts	0.0625	12.5	6.25	3.125	1.25	0.125
	0.125	25	12.5	6.25	2.5	0.25
	0.25	50	25	12.5	5	0.5
1 gallon	0.0625	6.25	3.125	1.56	0.625	0.0625
	0.125	12.5	6.25	3.125	1.25	0.125
	0.25	25	12.5	6.25	2.5	0.25

[1]Rate per inch Diameter at Breast Height (DBH); or rate per foot of shrub height.

Broadcast Applications to Flower Beds and Groundcovers:

Acelepryn may be applied for white grub control in flower beds and groundcovers. Flower bed and groundcover application rates are listed in Table 7. Apply in sufficient water to uniformly cover the area being treated (a minimum of 2 gallons per 1,000 square feet is recommended for flower bed and groundcover applications). Irrigate immediately after application or allow rainfall to move the product into the soil. Acelepryn may be applied to flower beds and groundcovers either before planting or after plants have been established.

TABLE 7: Ornamental Flowers and Groundcovers Soil Treatment Application Rates

Target Pest	Product (fl oz) per. Acre	Product (fl oz) per 1,000 Square Feet	lb AI/A
White Grubs (Asiatic garden beetle, European chafer, green June beetle, Japanese beetle, May/June beetles (Phyllophaga spp.), northern masked chafer, oriental beetle and southern masked chafer)	8.0	0.184	0.104
	16.0	0.367	0.208

Bark Applications:

Apply Acelepryn to the trunks and lower branches of trees and shrubs to control clearwing moth borer larvae. Bark treatment application rates are listed in Table 8. Make applications after the emergence of adult moths and before their eggs hatch. Thorough coverage of the bark is required for satisfactory control. Adult emergence varies according to pest species, host tree, environmental conditions and geographic location. Consult your local Syngenta Professional Products representative, Cooperative Extension Service specialist or pest control advisor for regionally specific information regarding application timing.

TABLE 8: Ornamental Application Bark Treatment Rates

Target Pests	Product (fl oz) per 100 Gallons	Lb AI per 100 Gallons	PPM	Percent AI (wt/vol)
Clearwing Borers, including peachtree borer	4	0.052	62.5	0.00625
	8	0.104	125	0.0125
	16	0.208	250	0.025
For maximum residual control of the pests listed above.	32	0.416	500	0.05

Formula for Determining the Active Ingredient Content of the Finished Spray Mixture:

The following formula may be used to determine the percent active ingredient (wt/wt) that is in the spray tank after mixing Acelepryn.

$$\frac{(18.4) \times (\text{Fluid ounces of Acelepryn added to spray tank})}{(\text{Gallons of finished spray mix}) \times (128)} = \text{Percent Active Ingredient of spray mix}$$

APPLICATION EQUIPMENT PREPARATION

1. Application equipment must be clean and free of previous pesticide deposits before mixing Acelepryn.
2. Use clean, well maintained and properly calibrated application equipment.
3. Fill sprayer tank 1/4 to 1/2 full of water.
4. Shake the container of Acelepryn well before pouring.
5. Then add Acelepryn directly to the sprayer tank.
6. Mix thoroughly to fully disperse the insecticide and continue agitation to keep the insecticide in suspension. Use mechanical or hydraulic agitation. Do not use air agitation.
7. It is recommended that the mixture not be stored in the spray or mix tank overnight.

Tank-mixtures:

Acelepryn may be tank-mixed with other pesticides. When tank-mixing Acelepryn with other pesticides, observe all precautions and limitations on each separate product label. Do not exceed label dosage rates. Acelepryn may not be mixed with any product containing a label prohibition against such mixing. The physical compatibility of Acelepryn will vary with different sources of pesticide products and local cultural practices. For a tank-mixture test, prepare on a small scale (pint or quart jar) using the proper proportions of pesticides and water to ensure the physical compatibility of the mixture.

Tank-mixing Sequence:

Add different formulation types in the sequence indicated below. Allow time for complete mixing and dispersion after the addition of each product.

1. Water-soluble bags
2. Water-dispersible granules
3. Wettable powders
4. Acelepryn and other water-based suspension concentrates
5. Water-soluble concentrates
6. Oil-based suspension concentrates
7. Emulsifiable concentrates
8. Adjuvants, surfactants, oils
9. Soluble fertilizers
10. Drift retardants

APPLICATION EQUIPMENT CLEANING

Prior to application, start with clean, well maintained application equipment. Immediately following application, thoroughly clean all application equipment to reduce the risk of forming hardened deposits that might become difficult to remove. Drain application equipment. Thoroughly rinse application equipment and flush hoses, boom and nozzles with clean water. Clean all other associated application equipment. Take all necessary safety precautions when cleaning equipment. Do not clean equipment near wells, water sources or desirable vegetation. Dispose of waste rinse water in accordance with local regulations.

INTEGRATED PEST MANAGEMENT (IPM) PROGRAMS

Acelepryn is recommended for IPM programs on turf and landscape ornamentals because it does not directly impact natural arthropod predator and parasitoid populations including ladybird beetles, lacewings, minute pirate bugs and predatory mites. The feeding behavior of predatory beneficial arthropods will aid in extending natural control of other insect and mite pests and will reduce the possibility of secondary pest outbreaks. Acelepryn will reduce the target pest species that may serve as a food source for beneficial arthropods. If Acelepryn is tank-mixed with an insect control product that negatively impacts beneficial arthropods, then the full benefit of Acelepryn to the IPM program may not be realized.

RESISTANCE MANAGEMENT

Some insects are known to develop resistance to products used repeatedly for control. When this occurs, the labeled dosages fail to suppress the pest population below threshold levels. Because the development of resistance cannot be predicted, the use of this product should conform to resistance management strategies established for the use area. These strategies may include incorporation of cultural and biological control practices, alternation of active classes of insecticides on succeeding generations and targeting the most susceptible life stage. Consult your local Syngenta Professional Products representative, Cooperative Extension Service specialist or pest control advisor for the latest information on resistance management in your area.

Restrictions

- Do not formulate this product into other end-use products without written permission from Syngenta Professional Products.
- Do not apply this product through any type of irrigation system.
- Do not apply this product with aerial application equipment.
- Do not apply this product in commercial nurseries and greenhouses.
- Do not apply more than 38.3 fluid ounces (equivalent to 0.5 lb of active ingredient) of product per acre per year in broadcast applications to turfgrass.
- Keep people and pets away from treated area until treatment has dried
- Wait a minimum of 7 days to retreat.
- Always shake container well before use.
- The following restrictions are required to permit use of Acelepryn in the State of New York:

Golf courses:

Greens, tee boxes: Do not apply this product within 25 feet of a water body (lake, pond, river, stream, wetland, or drainage ditch).

Fairways: Do not apply this product within 50 feet of a water body (lake, pond, river, stream, wetland, or drainage ditch).

All other use sites:

Do not apply this product within 100 feet of a water body (lake, pond, river, stream, wetland, or drainage ditch).

STORAGE AND DISPOSAL

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

Pesticide Storage

Do not subject to temperatures below 32 degrees F. Store product in original container only in a location inaccessible to children and pets. Do not contaminate water, other pesticides, fertilizer, food or feed in storage. Not for use or storage in or around the home.

Pesticide Disposal

Do not contaminate water, food or feed by storage or disposal. Wastes resulting from the use of this product must be disposed of on site or at an approved waste disposal facility.

Container Handling

Refer to the Net Contents section of this product's labeling for the applicable "Refillable Container" or "Nonrefillable Container" designation.

For Small (Capacity Equal to or Less Than 5 Gallons) Nonrefillable Plastic Containers:

Nonrefillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

For Large (Capacity Greater Than 5 Gallons) Nonrefillable Plastic Containers:

Nonrefillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

continued...

STORAGE AND DISPOSAL *(continued)*

For All Refillable Containers:

Refillable container. Refill this container with chlorantraniliprole only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times. Prior to refilling, inspect carefully for damage such as cracks, punctures, abrasions, worn out threads and closure devices. Check for leaks after refilling and before transporting. Do not transport if this container is damaged or leaking.

CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILITY

NOTICE: Read the entire Directions for Use and Conditions of Sale and Limitation of Warranty and Liability before buying or using this product. If the terms are not acceptable, return the product at once, unopened, and the purchase price will be refunded.

The Directions for Use of this product must be followed carefully. It is impossible to eliminate all risks inherently associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as manner of use or application, weather or crop conditions, presence of other materials or other influencing factors in the use of the product, which are beyond the control of SYNGENTA CROP PROTECTION, LLC or Seller. To the extent permitted by applicable law, Buyer and User agree to hold SYNGENTA and Seller harmless for any claims relating to such factors.

SYNGENTA warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated in the Directions for Use, when used in accordance with directions under normal use conditions. To the extent permitted by applicable law: (1) this warranty does not extend to the use of this product contrary to label instructions or under conditions not reasonably foreseeable to or beyond the control of Seller or SYNGENTA, and (2) Buyer and User assume the risk of any such use. TO THE EXTENT PERMITTED BY APPLICABLE LAW, SYNGENTA MAKES NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE NOR ANY OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS WARRANTED BY THIS LABEL.

To the extent permitted by applicable law, in no event shall SYNGENTA be liable for any incidental, consequential or special damages resulting from the use or handling of this product. **TO THE EXTENT PERMITTED BY APPLICABLE LAW, THE EXCLUSIVE REMEDY OF THE USER OR BUYER, AND THE EXCLUSIVE LIABILITY OF SYNGENTA AND SELLER FOR ANY AND ALL CLAIMS, LOSSES, INJURIES OR DAMAGES (INCLUDING CLAIMS BASED ON BREACH OF WARRANTY, CONTRACT, NEGLIGENCE, TORT, STRICT LIABILITY OR OTHERWISE) RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, SHALL BE THE RETURN OF THE PURCHASE PRICE OF THE PRODUCT OR, AT THE ELECTION OF SYNGENTA OR SELLER, THE REPLACEMENT OF THE PRODUCT.**

SYNGENTA and Seller offer this product, and Buyer and User accept it, subject to the foregoing Conditions of Sale and Limitation of Warranty and of Liability, which may not be modified except by written agreement signed by a duly authorized representative of SYNGENTA.

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(e.g., current product information), call
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