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INTERIM CHEMICAL REVIEW COMMITTEE

Fifth session

Geneva, 2 – 6 February 2004

**INCLUSION OF CHEMICALS IN THE INTERIM PRIOR INFORMED CONSENT
PROCEDURE – SUPPORTING DOCUMENTATION**

Information provided on trade

Note from the Secretariat

1. Annexed to this note is additional information provided by the United States on the continued production, use, import and export of dimefox, endrin, endosulfan, mevinphos and vinclozolin.

U.S. Environmental Protection Agency

January 28, 2004

Note to PIC Secretariat:

In response to your invitation to submit information on the continued production, use, import and export of the pesticides Dimefox, Endosulfan, Endrin, Mevinphos, and Vinclozolin, I am pleased to provide you with the following.

Dimefox

Dimefox is not registered for use in the United States, and the Environmental Protection Agency (EPA) has no reports of current production. Our records do not indicate that it was ever registered for use here.

Endosulfan

Endosulfan is a broad spectrum contact insecticide registered for use on a wide variety of agricultural commodities in the US. It was the subject of a reregistration review which was concluded in November, 2002. EPA can confirm its continued production, use and trade.

Although the review concluded that endosulfan was eligible for continued registration, a number of additional risk mitigation measures were imposed. EPA had concluded that agricultural uses of endosulfan based on the approved label instructions prior to the review, did pose occupational risks of concern, and also that the ecological risks constituted unreasonable adverse effects on the environment. However, the Agency believes these risk can likely be mitigated to levels below concern through changes to pesticide labeling and formulations.

Therefore, EPA has now required the following measures:

1. additional data to confirm EPA's decision about occupational exposures associated with the application of dip treatment to roots or whole plants and ecological risks;
2. risk mitigation measures and label changes as outlined in the Reregistration Eligibility Document (available on EPA's web site: http://www.epa.gov/oppsrrd1/REDs/endosulfan_red.pdf) A fact sheet which summarizes these measures is attached to the electronic transmission of this note.
3. additional ecological risk mitigation measures may be imposed to protect especially sensitive organisms, if vulnerable areas in specific geographic areas are identified as a result of the stakeholder process

Endrin

Endrin is an insecticide which was registered for use in the US on a wide variety of crops such as cotton and grains. It was also registered as a rodenticide. Under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), most US registrations and uses were canceled in 1979. By 1984, all remaining uses were cancelled. EPA's formal intent to cancel registration and denial of applications for registration of products containing endrin was published in the U.S. Federal Register (Vol. 44, No. 144) on July 25, 1979; another notice of intent to cancel the remaining uses was published in the Federal Register (Vol. 49, No. 207) on October 24, 1984. Hard copies of these notices are available upon request. EPA cannot confirm any current production, use, import or export.

Mevinphos

Mevinphos is an insecticide used on vegetables and fruits and was classified by EPA as a restricted use pesticide (RUPs). In the U.S., RUPs can only be used by, or under the direct supervision of, certified and trained applicators. Because of concerns about occupational poisonings and with the use of a modeling risk tool, mevinphos was identified as a pesticide that warranted accelerated action.

In November 1993, the sole U.S. registrant submitted proposed risk-reduction measures. However, EPA determined these measures to be inadequate to allay Agency concerns. In the face of a likely suspension of registrations by the Agency, the registrant agreed to a voluntary cancellation. All use of existing stocks in the U.S. was to stop as of February 28, 1995. Mevinphos produced in the US may be exported to countries which permit mevinphos use. Such stocks must comply with the US labeling requirements and the specifications of the foreign purchaser. EPA can confirm continued production and trade of mevinphos. Whether mevinphos is currently produced and exported from the U.S. is in the process of being confirmed.

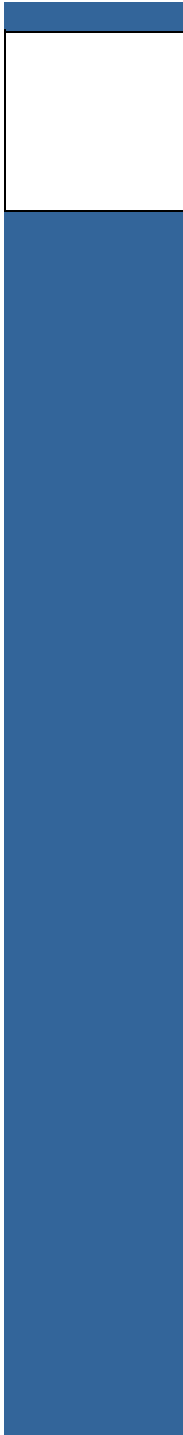
A fact sheet which summarizes these measures is attached to the electronic transmission of this note.

Vinclozolin

Vinclozolin is a fungicide which was registered in the US on a wide variety of both agricultural and ornamental crops in several different formulations. As a result of a reregistration review which concluded in October 2000, risk mitigation measures were put into effect. Most of the permitted uses were cancelled; the type of permitted formulation was limited to granular; the type of packaging permitted is only water soluble bags; the application method was limited to enclosed cabs for airblast applicators; additional personal protective equipment was required; re-entry intervals for kiwi harvesters was reduced.

A fact sheet which summarizes these measures is attached to the electronic transmission of this note. EPA can confirm continued production and trade of mevinphos. Whether mevinphos is currently produced and exported from the U.S. is in the process of being confirmed.

*Cathleen McInerney Barnes,
US Designated Expert to the PIC/ICRC*



	<h1>Pesticides: Reregistration</h1>	

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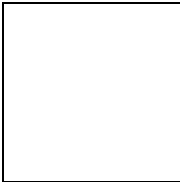
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Endosulfan RED Facts

November 2002
EPA-738-F-02-012

Pesticide Reregistration

All pesticides sold or distributed in the United States must be registered by EPA, based on scientific studies showing that they can be used without posing unreasonable risks to people or the



environment. Because of advances in scientific knowledge, the law requires that pesticides which were first registered before November 1, 1984, be reregistered to ensure that they meet today's more stringent standards.

In evaluating pesticides for reregistration, EPA obtains and reviews a complete set of studies from pesticide producers, describing the human health and environmental effects of each pesticide. To implement provisions of the Food Quality Protection Act of 1996, EPA considers the special sensitivity of infants and children to pesticides, as well as aggregate exposure of the public to pesticide residues from all sources, and the cumulative effects of pesticides and other compounds with common mechanisms of toxicity. The Agency develops any mitigation measures or regulatory controls needed to effectively reduce each pesticide's risks. EPA then reregisters pesticides that meet the safety standard of the FQPA and can be used without posing unreasonable risks to human health or the environment.

When a pesticide is eligible for reregistration, EPA explains the basis for its decision in a Reregistration Eligibility Decision (RED) document. This fact sheet summarizes the information in the RED document for reregistration case 0014, endosulfan.

Use Profile

Endosulfan is a broad spectrum contact insecticide and acaricide registered for use on a wide variety of vegetables, fruits, cereal grains, and cotton, as well as ornamental shrubs, trees, vines, and ornamentals for use in commercial agricultural settings. Total average annual use of endosulfan is estimated at approximately 1.38 million pounds of active ingredient (lbs. ai), according to Agency and registrant estimates. Crops with the highest average percent drop treated are: squash (40%), eggplant (41%), cantaloupe (31%), sweet potato (31%), broccoli (26%), pears (20%), and pumpkins (20%). Crops with the highest sales in 2001 include: cotton (14.2%), cantaloupe (13.2%), tomatoes (12.2%), and potatoes (8.15%).

Endosulfan is formulated as a liquid emulsifiable concentrate (9-34% ai) and wettable powder (1-50% ai). The wettable powder formulation is frequently packaged in water soluble bags. Endosulfan can be applied by groundboom sprayer, fixed-wing aircraft, chemigation (potatoes only), airblast sprayer, rights-of-way sprayer, low pressure handwand sprayer, high pressure handwand sprayer, backpack sprayer and dip treatment. Regulatory

History

Endosulfan was first registered as a pesticide in the U.S. in 1954 to control agricultural insect and mite pests on a variety of field, fruit, and vegetable crops. A Registration Standard dated September 17, 1981, and a Guidance Document dated April 1982 were issued for endosulfan, which required additional generic and product-specific data for the manufacturing products of the technical registrants. Since the Guidance Document was issued, there have been seven DCIs generated: 10/23/85, 5/19/86, 5/27/86, 1/30/87, 6/19/87, 9/02/92, and 5/10/94 concerning the potential formation of chlorinated dibenzo-p-dioxins and dibenzofurans in technical endosulfan products. An additional DCI was issued in October 1994, which primarily concerned residue chemistry data deficiencies.

Further, in 1991, the technical registrants amended labels to

incorporate a 300-foot spray drift buffer for aerial applications between treated areas and water bodies. This setback was adopted in order to address concerns about contamination of water and risks to aquatic organisms. In 2000, the technical registrants amended technical product labels to remove all residential use patterns. Currently, there are 94 endosulfan products registered.

Human Health Assessment

Toxicity

Endosulfan generally has been shown to have high acute oral and inhalation toxicity as well as slightly toxic dermal toxicity. It is an irritant to the eyes and is not a dermal sensitizer. Endosulfan is neither mutagenic nor carcinogenic. Endosulfan primarily affects the nervous system. Toxic effects observed in animals from acute, subchronic, developmental neurotoxicity, and chronic/carcinogenic toxicity studies found that endosulfan causes neurotoxic effects, which are believed to result from over-stimulation of the central nervous system. Further, there is evidence (effects observed in a submitted chronic oral toxicity study in rats) that endosulfan acts as an endocrine disruptor. However, further investigation is necessary to determine the relevance and impact of such findings on public health.

Dietary Exposure

EPA has assessed dietary risk by estimating exposure to endosulfan residues from consumption of food and drinking water that can occur over a single-day (acute) or longer (chronic). Generally, a dietary (food) risk estimate that is less than 100% of the acute or chronic Population Adjusted Dose does not exceed the Agency's risk concern. Acute risk estimates from exposures to food, associated with the use of endosulfan exceed the Agency's level of concern for some population subgroups. For example, for exposure resulting from applications of endosulfan, for the most exposed population subgroup, children 1-6 years old, the percent acute PAD value is 150% at the 99.9th percentile of exposure from consumption of food alone. The crops that contributed the most to the risks of concern are succulent beans and peas. Chronic dietary (food) exposure estimates are below the Agency's level of concern for all subpopulations. For the most highly exposed subpopulation, children 1-6 years old, the percent chronic PAD value is 17% from consumption of food alone.

Drinking water exposure to endosulfan can occur through ground and surface water contamination. EPA used modeled Tier 2 estimates of endosulfan and endosulfan sulfate to estimate risk for acute exposures. Taking into account the supported uses of endosulfan, the Agency concluded that residues of endosulfan in drinking water are of concern. Drinking water estimates for chronic exposures, based on models, from both ground and surface water are not of concern.

Risk from All Registered Pesticide Endosulfan Exposures

To assess risks from all endosulfan exposures, the Agency combined risk from food and drinking water exposure only. The technical registrants are not supporting residential or other non-occupational uses of endosulfan. As a result, these use patterns have not been considered for regulatory purposes at this time. The acute estimated drinking water concentrations for endosulfan are above the acute drinking water level of comparisons (DWLOCs) for

infants <1 year and the most sensitive population subgroup, children 1-6 years old. The chronic estimated drinking water concentrations for the U.S. general population and all population subgroups are below the chronic drinking water levels of comparisons (DWLOCs) for the U.S. general population and all population subgroups and, therefore, are not of concern.

Occupational Exposure

Occupational handlers can be exposed to endosulfan through mixing, loading and/or applying a pesticide or re-entering treated sites. Occupational handlers of endosulfan include individual farmers or growers who mix, load and/or apply pesticides and professional or custom agricultural applicators. The post-application occupational risk assessment considered exposures to workers entering treated sites in agriculture.

Risk for all of these potentially exposed populations is measured by a Margin of Exposure (MOE), which determines how close the occupational exposure comes to a NOAEL. Generally, MOEs greater than 100 are not of concern. Restricted Entry Intervals (REIs) are 24 hours on current endosulfan labels. The Agency has determined that there are potential mixer, loader, applicator as well as post-application exposures to occupational handlers. Based on current use patterns, there are some short-term dermal and inhalation risks of concerns for workers who mix, load and apply endosulfan to agricultural sites as well as to those workers who re-enter a treated area following application of endosulfan.

Environmental Assessment

Ecological risks are also of concern to the Agency. The environmental risk assessment suggests that exposure to endosulfan could result in both acute and chronic risks of concern for terrestrial and aquatic organisms. Exposure to endosulfan has resulted in both reproductive and development effects in nontarget animals, particularly birds, fish and mammals.

Risk Mitigation Measures

To mitigate human health and ecological risks of concern for endosulfan, the following measures will be implemented:

Dietary (Food) Risk

- Delete use on succulent beans, succulent peas, spinach, and grapes

Dietary (Drinking Water) and Ecological Risk

Several mitigation measures are needed to reduce the potential for contamination of drinking water.

- Delete use on pecans;
- Reduce maximum seasonal application rates from 3lbs./ai/A to 2.5 lbs./ai/A for pome fruit, stone fruit, and citrus;
- Reduce maximum seasonal application rate from 3 lbs./ai/A to 2 lbs./ai/A for melons, cucurbits, lettuce, tomatoes, sweet potatoes, cotton (ground), broccoli, cauliflower, cabbage, kohlrabi, brussels sprouts, strawberries, filberts, walnuts, almonds, macadamia nuts, peppers, eggplant, potatoes,

carrots, dry beans, dry peas, and tobacco;

- Reduce maximum seasonal application rate from 3 lbs./ai/A to 1.5 lbs./ai/A for sweet corn, cotton (aerial) and blueberries;
- Reduce maximum seasonal application rate from 3 lbs./ai/A to 1 lb./ai/A for celery;
- Require 100 ft. spray buffer for ground applications between a treated area and water bodies;
- Require 30 ft. maintained vegetative buffer strip between a treated area and water bodies;
- Require all products to be Restricted Use;
- Restrict use on cotton to AZ, CA, NM, OK and TX only; and
- Restrict use on tobacco to IN, KY, OH, PA, TN and WV only.

Occupational Risk

- Require all wettable powders to be packaged in water soluble bags;
- Cancel use of wettable powders on tomatoes, sweet corn, sweet potatoes, cotton, small grains, alfalfa (seed), carrots, dry beans, dry peas, pineapples, and tobacco;
- Cancel aerial application using the wettable powder formulation on pome fruits, stone fruits, citrus, blueberries, strawberries, collard greens (seed), kale (seed), mustard greens (seed), radish (seed), turnip (seed), rutabaga (seed), broccoli, (seed), cauliflower (seed), kohlrabi (seed), cabbage (seed), filberts, walnuts, almonds, and macadamia nuts;
- Require closed mixing/loading systems for aerial application using the EC formulation on pome fruits, stone fruits, citrus, sweet corn, sweet potatoes, cotton, collard greens (seed), kale (seed), mustard greens (seed), radish (seed), turnip (seed), rutabaga (seed), broccoli, (seed), cauliflower (seed), kohlrabi (seed), cabbage (seed), blueberries, small grains, alfalfa (seed), filberts, walnuts, almonds and macadamia nuts;
- Require closed cabs for airblast applications on pome fruits, stone fruits, citrus, filberts, walnuts, almonds and macadamia nuts;
- Prohibit use of high pressure handwands with rates greater than 0.005 lbs/ai/gal;
- Increase REI to 48 hours for all crops except as noted in the following bullets;
- Increase REI for WP products to 3 days for melons and cucurbits;
- Increase REI for WP products to 4 days for lettuce, celery, pome fruit, stone fruit, citrus, collard greens, kale, mustard greens, radish, turnip, rutabaga, ornamental trees and

shrubs;

- Increase REI for WP products to 5 days for collard greens (seed), kale (seed), mustard greens (seed), radish (seed), turnip (seed) and rutabaga (seed);
- Increase REI for WP products to 9 days for blueberries, broccoli, cauliflower, kohlrabi, cabbage, and brussels sprouts;
- Increase REI for WP products to 12 days for broccoli (seed), cauliflower (seed), kohlrabi (seed), and cabbage (seed);
- Increase REI for EC products to 3 days for sweet potatoes
- Increase REI for EC products to 4 days for broccoli, cauliflower, kohlrabi, cabbage, and brussels sprouts;
- Increase REI for EC products to 6 days for blueberries;
- Increase REI for EC products to 7 days for broccoli (seed), kohlrabi (seed), and cabbage (seed); and
- Increase REI for EC products to 17 days for sweet corn.

Stakeholder Process

Given the toxicity and persistence of endosulfan and potential risks to aquatic organisms, the Agency has developed a number of mitigation measures in order to reduce the risks to aquatic organisms outlined in this document.

While the Agency believes that these measures will reduce the potential for exposures to aquatic organisms and reduce the overall environmental loading of endosulfan, it also believes that in specific geographic areas where conditions exist that make aquatic organisms especially vulnerable (e.g., shallow, leaky aquifers, highly erodible lands, the presence of especially sensitive organisms and high use of endosulfan) additional measures may be identified. In order to more fully evaluate the risks in these vulnerable areas; the risk management strategies that may be in place or could potentially be implemented in such areas (e.g., use of retention ponds) to reduce exposure; and the benefits of the use of endosulfan in those areas, the Agency is planning to conduct a stakeholder process to accomplish this objective. Further, the impacts of atmospheric transport may require additional evaluation during this time period.

Additional mitigation measures may be needed following the completion of this process.

Additional Data Required

EPA is requiring the following additional generic studies for endosulfan to confirm its regulatory assessments and conclusions:

- OPPTS 850.2100: Avian acute oral toxicity of bobwhite quail and mallard ducks
- OPPTS 850.2200: Avian subchronic oral toxicity of bobwhite quail and mallard ducks
- OPPTS 850.2300: Avian reproduction study

- OPPTS 850.1075: Freshwater fish acute toxicity study of bluegill sunfish
- OPPTS 850.1300: Early life stage fish
- OPPTS 850.1350: Life cycle invertebrate
- OPPTS 850.1500: Freshwater fish full life cycle using rainbow trout
- OPPTS 850.1075: Estuarine/marine fish acute toxicity study
- OPPTS 850.1035: Estuarine/marine invertebrate acute toxicity study of
- mysid shrimp
- OPPTS 850.1735: Whole sediment acute toxicity testing using a freshwater invertebrate
- OPPTS 850.1740: Whole sediment acute toxicity testing using an estuarine/marine invertebrate
- OPPTS 850.1735S: Whole sediment chronic toxicity testing using a freshwater invertebrate
- OPPTS 850.1740S: Whole sediment chronic toxicity testing using an estuarine/marine invertebrate
- 164-2 (Special Study): Vegetative buffer effectiveness study
- OPPTS 835.7100: Groundwater monitoring study
- OPPTS 835.7200: Surface drinking water monitoring study
- OPPTS 870.6200: Subchronic Neurotoxicity - Rat
- OPPTS 870.6300: Developmental Neurotoxicity Toxicity Study - Rat
- OPPTS 860.1380: Storage stability (oils seed, non-oily grain and processed commodities)
- OPPTS 860.1500: Crop field trials for the following raw agricultural commodities: barley hay, and pearled barley; oat forage, hay, and rolled oats; rye forage; wheat forage, and hay
- OPPTS 860.1500: Crop field trials for tobacco and a pyrolysis
- OPPTS 860.1520: Magnitude of residue in processed food/feed commodities
- OPPTS 875.1100: Dermal outdoor exposure for applying dip treatments to trees and roots or whole plants
- OPPTS 875.1700: Product use information for applying dip treatments to trees and roots or whole plants

The Agency is also requiring product-specific data including product chemistry and acute toxicity studies, revised Confidential Statements of Formula (CSFs), and revised labeling for

reregistration.

Regulatory Conclusion

The Agency has assessed all 80 tolerances for endosulfan and can make a FQPA safety determination based on a review of the dietary (food and drinking water), ecological and occupational risks associated with the supported uses of currently registered pesticides containing endosulfan.

Agricultural uses of endosulfan based on approved labeling pose occupational risks of concern and ecological risks that constitute unreasonable adverse effects on the environment. However, the Agency believes these risks can likely be mitigated to levels below concern through changes to pesticide labeling and formulations. Accordingly, the Agency has determined that endosulfan is eligible for reregistration provided that: (1) additional required data will confirm this decision for occupational exposures associated with the application of dip treatment to roots or whole plants and ecological risks; and (2) the risk mitigation outlined in the RED are adopted, and label amendments are made to reflect these measures. Further, if vulnerable areas in specific geographic areas are identified as a result of the stakeholder process, additional ecological risk mitigation measures may be necessary to protect especially sensitive organisms. The endosulfan RED document includes guidance and time frames for complying with any label changes for products containing endosulfan.

For More Information

EPA is requesting public comments on the Reregistration Eligibility Decision (RED) document for endosulfan during a 60-day time period, as announced in a Notice of Availability published in the Federal Register. To obtain a copy of the RED document or to submit written comments, please contact the Pesticide Docket, Public Information and Records Integrity Branch, Information Resources and Services Division (7502C), Office of Pesticide Programs (OPP), US EPA, Washington, DC 20460; telephone number 703-305-5805.

Electronic copies of the RED, this Fact Sheet, and all supporting documents are available on the Internet. See <http://www.epa.gov/REDs>.

The Agency has also established an official record for this action under docket control numbers OPP-34242 and eDocket OPP-2002-0262.

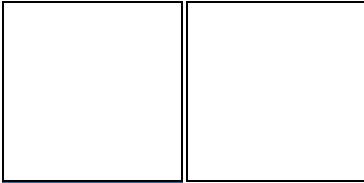
Printed copies of the RED and fact sheet can be obtained from EPA's National Service Center for Environmental Publications (EPA/NSCEP), PO Box 42419, Cincinnati, OH 45242-2419, telephone 1-800-490-9198; fax 513-489-8695.

Following the comment period, the endosulfan RED document also will be available from the National Technical Information Service (NTIS), 5285 Port Royal Road, Springfield, VA 22161, telephone 1-800-553-6847, or 703-605-6000.

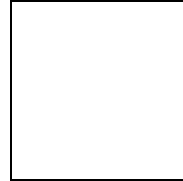
For more information about EPA's pesticide reregistration program, the endosulfan RED, or reregistration of individual products containing endosulfan please contact the Special Review and Reregistration Division (7508C), OPP, US EPA, Washington, DC 20460, telephone 703-308-8000.



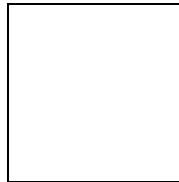
For information about the health effects of pesticides, or for assistance in recognizing and managing pesticide poisoning symptoms, please contact the National Pesticide Information Center (NPIC). Call toll-free 1-800-858-7378, from 6:30 am to 4:30 pm Pacific Time, or 9:30 am to 7:30 pm Eastern Standard Time, seven days a week. Their internet address is <http://npic.orst.edu>.



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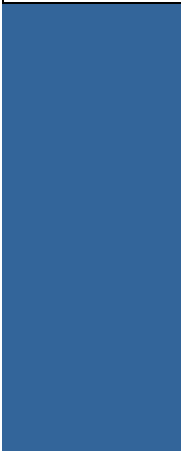


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R.E.D. FACTS

Mevinphos

Pesticide

Reregistration

All pesticides sold or distributed in the United States must be registered by EPA, based on scientific studies showing that they can be used without posing unreasonable risks to people or the environment. Because of advances in scientific knowledge, the law requires that pesticides which were first registered years ago be reregistered to ensure that they meet today's more stringent standards.

In evaluating pesticides for reregistration, EPA obtains and reviews a complete set of studies from pesticide producers, describing the human health and environmental effects of each pesticide. The Agency imposes any regulatory controls that are needed to effectively manage each pesticide's risks. EPA then reregisters pesticides that can be used without posing unreasonable risks to human health or the environment.

When EPA reaches a decision regarding the eligibility of a pesticide for reregistration, the Agency announces this and provides opportunity for public comment. This fact sheet serves as and explains the Agency's Reregistration Eligibility Decision (RED) for mevinphos.

Use Profile Mevinphos is an insecticide used on vegetables and fruits, predominantly lettuce and cole crops. It is a member of the organophosphate family of chemicals. Mevinphos is formulated as a ready-to-use liquid and concentrate. It is applied to foliage using aerial, boom spray and airblast equipment.

Regulatory

History

Mevinphos was initially registered as a pesticide in 1957. EPA became concerned about its safety because of the high rate of related occupational poisonings during the 1970s. In 1978, EPA classified mevinphos as a Restricted Use Pesticide. Agency concerns about safety continued to grow through the 1980s.

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In December 1991, based on concern about the toxicity of the pesticide parathion, EPA initiated the Acute Worker Risk Strategy (AWRS) project to identify and find regulatory solutions for other pesticides posing acute risks to agricultural workers. The information used to identify pesticides for this project was primarily human incident data. Using a methodology to rank the pesticides in terms of concerns, EPA identified five pesticides which warranted accelerated action. Mevinphos was one of the five. In May 1993, EPA representatives met with registrants of the five pesticides to discuss risk concerns and set timelines for submission of voluntary risk-reduction measures.

In November 1993, Amvac (the sole U.S. registrant of mevinphos)

submitted proposed risk-reduction measures. EPA determined these measures to be inadequate to allay the Agency's concerns and met with Amvac in June of 1994 to discuss its remaining concerns. EPA and Amvac were unable to agree on a way to reduce risks.

On June 30, 1994, EPA was prepared to issue a Notice of Intent to Suspend all mevinphos registrations when Amvac submitted a request for voluntary cancellation. EPA accepted this request and on July 1, 1994, issued a Cancellation Order for all mevinphos registrations, effective immediately. The Agency subsequently published a Notice of Receipt of Request for Cancellation, Announcement of Cancellation Order, and FIFRA section 6(g) Notification for Mevinphos in the *Federal Register* on August 1, 1994.

Human Health

Assessment

Toxicity

Regarding its mode of action, mevinphos is active by contact, inhalation and ingestion. The generally accepted biochemical mechanism of mevinphos's acute toxicity is through inhibition of the enzyme acetylcholinesterase (AChE). AChE breaks down acetylcholine (ACh), a compound that assists in transmitting signals through the nervous system. Mevinphos inhibits the AChE activity in the body. When AChE is inhibited at nerve endings, the inhibition prevents the ACh from being degraded and results in prolonged stimulation followed by paralysis of the nerves. If the dose is large enough, the nerves controlling breathing may be affected sufficiently that death occurs.

Physical signs and symptoms of mevinphos poisoning include headache, nausea, dizziness, blurred vision, excessive perspiration,

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salivation, secretion of tears, vomiting, diarrhea, aching muscles, and a general feeling of severe malaise. Uncontrollable muscle twitching and fasciculations can occur. Severe poisoning can lead to convulsions, coma, pulmonary edema, muscle paralysis, and death by asphyxiation. Mevinphos poisoning also may cause various psychological, neurological and cognitive effects including confusion, anxiety, depression, irritability, mood swings, difficulty concentrating, short-term memory loss, persistent fatigue, blurred vision and, in severe poisoning cases, toxic psychosis resulting in bizarre behavior. Some of the symptoms may persist for weeks or months after the initial exposure and individuals who have been exposed may become more sensitive to additional exposures. Exposure to mevinphos may result in long-lasting neurotoxic effects in some individuals.

Mevinphos is extremely toxic to mammals by all routes of exposure and has been placed in Toxicity Category I, indicating the greatest degree of acute toxicity, for oral, dermal and inhalation effects. The lethal dose and lethal concentration levels for these routes of exposure fall well within the limits for Toxicity Category I, and are significantly lower than the lethal doses for the likely alternatives to mevinphos. Mevinphos has a steep dose response curve; that is, the difference between a nonlethal dose and a lethal dose is small.

Mevinphos is not a known carcinogen. In a chronic feeding/carcinogenicity study using rats, the No Observed Adverse Effect Level (NOAEL) was 0.025 mg/kg/day, and the Lowest Effect Level (LEL) was 0.35 mg/kg/day for decreases in plasma and brain cholinesterase activity.

Clinical signs were limited to cholinergic effects and included protruding eyes, tremors, anogenital staining, and excessive salivation.

There was no evidence of any developmental effect on the rat or rabbit fetus, even at doses that were toxic to the dams and does. Reproductive effects are unknown as data submissions have not been reviewed. Evidence suggests that mevinphos is a slight mutagen.

Dietary Exposure

The Agency's preliminary risk assessment for acute effects resulting from dietary exposure to mevinphos indicates a concern, particularly for infants and children. If better data are submitted to the Agency, the Agency would reassess risk.

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Human Risk Assessment

Based on the above scientific determinations and other evaluations, such as human incident data, EPA determined mevinphos to be unsafe for any use. Because of this determination, the Agency was prepared to issue a Notice of Intent to Suspend all mevinphos registrations on June 30, 1994.

Environmental

Assessment

Environmental Fate

The environmental fate database for mevinphos is incomplete. Information is available on the persistence and mobility of the parent compound but not for its degradates. Mevinphos primarily dissipates via microbial metabolism, which occurs quite rapidly (the half-life is approximately one day). Hydrolysis and photodegradation occur, but not as rapidly as metabolism.

Mevinphos degrades rapidly by microbial action with a half-life of about one day under aerobic conditions and about 12 days under anaerobic conditions. The amounts and nature of the degradates are not well characterized. Mevinphos is very mobile in soils, but is not expected to reach ground water due to its short half life.

Ecological Effects

Mevinphos is very highly toxic to avian species by the oral route of exposure, and slightly toxic to highly toxic by the dietary route. Available reproduction data are unacceptable.

In acute toxicity studies, mevinphos is very highly toxic to fish and aquatic invertebrates. Acceptable data on chronic effects are unavailable. Acceptable data regarding marine and estuarine toxicity also are unavailable.

Risks to Non-Target Species

In the late 1980s, the Fish and Wildlife Service's Office of Endangered Species determined that certain mevinphos uses could jeopardize the continued existence of endangered species or their critical habitat. Before cancellation, the mevinphos reregistration database was being completed. The information from that database would have been used by EPA to develop a program to reduce or eliminate endangered species' exposure to mevinphos to the point where use would not have jeopardized their existence.

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Ecological Effects Risk Assessment

Although mevinphos's high toxicity has been known for some time and has generated concern, an incomplete database prevented EPA from

further determining mevinphos's risk to wildlife.

Regulatory Conclusion

Mevinphos is not eligible for reregistration because all registrations have been canceled. However, because mevinphos is so acutely toxic that even a small exposure, whether by mistake, accident, or through routine activity, can cause serious poisonings, EPA would have found it ineligible for reregistration.

The August 1, 1994, Federal Register Notice of Receipt of Request for Cancellation, Announcement of Cancellation Order, and FIFRA section 6(g) Notification for Mevinphos, sets the last legal sale, distribution, and use dates. No person may sell or distribute existing stocks of canceled mevinphos products after December 31, 1994. Mevinphos may be applied, in accordance with prior-approved labeling, through February 28, 1995 (including commercial applicators). No person may use existing stocks of canceled pesticide products containing mevinphos after February 28, 1995. According to Resource Conservation and Recovery Act (RCRA) regulations, mevinphos products will be classified as "solid waste," and potentially "hazardous waste," once a decision is made to discard them. They are then subject to RCRA requirements, in addition to any state and local requirements. Persons in possession of mevinphos waste are encouraged to contact state, local and federal authorities. The RCRA/Superfund Industrial Assistance Hotline is 800-424-9346. Mevinphos products produced in the U.S., including existing stocks, may be exported to countries which permit mevinphos use. These stocks and products must comply with the labeling and purchaser acknowledgement requirements for unregistered pesticides under FIFRA section 17(a) (7 U.S.C. 136 o(a)) and the EPA's Export Policy and Procedures for Exporting Unregistered Pesticides in 40 CFR part 168 subpart D.

For More Information

EPA is accepting public comments on this Reregistration Eligibility Decision (RED) during a 60-day time period, as announced in a Notice of Availability published in the *Federal Register*. To submit written comments, please contact the Pesticide Docket, Public Response and

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Program Resources Branch, Field Operations Division (7506C), Office of Pesticide Programs (OPP), US EPA, Washington, DC 20460, telephone 703-305-5805.

Electronic copies of the RED/fact sheet can be downloaded from the Pesticide Special Review and Reregistration Information System at 703-308-7224, and can be reached on the Internet via *FEDWORLD.GOV* and EPA's gopher server, *EARTH1.EPA.GOV*.

Following the comment period, the mevinphos RED also will be available from the National Technical Information Service (NTIS), 5285 Port Royal Road, Springfield, VA 22161, telephone 703-487-4650.

For more information about EPA's pesticide reregistration program, the mevinphos RED, or the status of individual products containing mevinphos, contact the Special Review Branch, Special Review and Reregistration Division (7508W), OPP, US EPA, Washington, DC 20460, telephone 703-308-8010.

For information about the health effects of pesticides, or for assistance

in recognizing and managing pesticide poisoning symptoms, please contact the National Pesticides Telecommunications Network (NPTN). Call tollfree 800-858-7378, between 8:00 am and 6:00 pm Central Time, Monday through Friday.

R.E.D. FACTS

Vinclozolin

Pesticide

Reregistration

All pesticides sold or distributed in the United States must be registered by EPA, based on scientific studies showing that they can be used without posing unreasonable risks to people or the environment. Because of advances in scientific knowledge, the law requires that pesticides which were first registered before November 1, 1984, be reregistered to ensure that they meet today's more stringent standards.

In evaluating pesticides for reregistration, EPA obtains and reviews a complete set of studies from pesticide producers, describing the human health and environmental effects of each pesticide. To implement provisions of the Food Quality Protection Act of 1996, EPA considers the special sensitivity of infants and children to pesticides, as well as aggregate exposure of the public to pesticide residues from all sources, and the cumulative effects of pesticides and other compounds with common mechanisms of toxicity. The Agency develops any mitigation measures or regulatory controls needed to effectively reduce each pesticide's risks. EPA then reregisters pesticides that meet the safety standard of the FQPA and can be used without posing unreasonable risks to human health or the environment.

When a pesticide is eligible for reregistration, EPA explains the basis for its decision in a Reregistration Eligibility Decision (RED) document. This fact sheet summarizes the information in the RED document for reregistration case 2740, vinclozolin.

Use Profile Vinclozolin is a fungicide used to control various diseases on raspberries, chicory grown for Belgian endive, lettuce, kiwi, canola, snap beans, dry bulb onions, ornamentals, and turf. Import tolerances have been established to permit importation of vinclozolin-treated cucumbers, sweet peppers and wine. Vinclozolin is formulated as a dry flowable and extruded granular which may be applied with aerial, chemigation, or ground equipment (broadcast, band, or soil drench); as a dip treatment on ornamental bulbs and corms, cut flowers, rose budwood, or nursery stock; and with thermal foggers in greenhouses.

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Regulatory

History

Vinclozolin has been registered in the United States since 1981 for use as a fungicide. A Data Call-In (DCI) was issued in 1991 for vinclozolin requiring the submission of additional data on product and residue chemistry, toxicity, environmental fate, and ecological effects. Subsequent DCIs were issued in 1995 and 1996 requiring additional environmental fate and ecological toxicity studies. Also, the Agricultural Data Call-In (AGDCI) was issued in 1995, which required data to help estimate postapplication occupational exposure. The Reregistration Eligibility Decision (RED) reflects a reassessment of all data which were submitted in response to the DCIs.

In April 1997, the risks from all uses were reevaluated under the Food Quality

Protection Act (FQPA) when a new use for this chemical was proposed by BASF Corporation (succulent beans). The estimated dietary cancer risks were above the level generally regarded as negligible. As a result, previously registered uses were voluntarily canceled by the registrant and the Agency has revoked the related tolerances, namely for tomatoes, plums, prunes, and grapes (except wine grapes). To reduce exposure to children, residential uses of vinclozolin were deleted and turf and ornamental applications limited to commercial and industrial sites. Following this mitigation, a three-year time-limited tolerance was established for succulent beans in 1997.

In June 1998, after EPA's decision to retain the FQPA safety factor of 10X, BASF requested voluntary cancellation of its vinclozolin uses on stone fruits and strawberries to reduce dietary exposure to vinclozolin residues. The Agency published a Federal Register notice announcing the use deletions on July 30, 1998. At that time, BASF also requested use rate reductions for turf and agreed to phase out its liquid formulations, as well as phase-in water soluble packaging for the remaining formulations. Revocation of the stone fruit and strawberry tolerances will be proposed in an upcoming Federal Register notice.

On July 18, 2000 the Agency established 3 year time-limited tolerances for vinclozolin and its metabolites containing the 3,5-DCA moiety on succulent beans, canola, eggs, milk, and the meat, fat, and meat byproducts of cattle, goats, hogs, horses and sheep. In order to mitigate risk associated with the added uses, EPA accepted a proposal submitted by the registrant which includes the following actions to occur over the next 4 years: A phase out of all domestic food uses of vinclozolin except for use on canola, and revocation of all import tolerances except for wine grapes. The Agency published the proposed use deletions in the Federal Register

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for public comment on September 20, 2000 (65 FR 56894, FRL-6744-2). On September 18, 2000, EPA received objections to the newly-issued tolerances on succulent beans and canola. Once EPA finalizes its response to the objections, it will amend its reregistration and reassessment decisions, if any such amendment is necessary.

In addition to the use cancellations, BASF also initiated measures at that time to mitigate risks identified through the reregistration process including cancellation of the use on ornamental plants due to postapplication risk concerns and new restrictions on turf use based on non-dietary risks to children. Use on sod farm turf was prohibited (except for transplant onto golf courses) and application to turf was restricted to golf courses and industrial sites.

In an effort to promote transparency and public acceptance in regulatory decision making, the Agency, in cooperation with the U.S. Department of Agriculture (USDA), is working to modify the reregistration process. Until a final process is established, an interim process is being used to provide opportunities for stakeholders to ask questions and provide input on risk assessments and risk mitigation strategies, via conference calls and other formats. Consistent with this process, a conference call was conducted on June 1, 2000 with EPA, USDA, the registrant, and other stakeholders (e.g., growers, commodity groups, land grant universities) to discuss the basis of the calculated risks of vinclozolin, the Agency's risk concerns, and the registrant's voluntary cancellation and phase-out proposal. Also, a close-out conference call was conducted on September 25, 2000 with many of the same participants from the June 1st conference call, to discuss the additional risk management decisions and resultant changes to the vinclozolin labels.

Human Health Assessment

Toxicity

Vinclozolin generally has been shown to have low acute oral/dermal/inhalation toxicity. Vinclozolin is not an irritant to the eye/skin but can act as a skin sensitizer. The principal toxic effects induced by vinclozolin and/or its metabolites are related to its antiandrogenic activity. Androgens are the principal male steroid hormones, such as testosterone, which stimulate the development and maintenance of the male reproductive system and secondary sex characteristics. Studies show that vinclozolin may have minimal antiandrogenic activity at relevant dose levels but that at least two vinclozolin metabolites occur in mammals, plants, and soil and are responsible for much of the antiandrogenic activity attributable to vinclozolin. Vinclozolin exerts its effects most dramatically during the developmental stages of

4 animals ultimately resulting in reproductive effects. At low dose levels in rats (>3 mg/kg/day), the most androgen sensitive effects are noted, such as decreased prostate weight, weight reduction in other sex organs, nipple/areolas development, and decreased ano-genital distance in male rats. At higher dose levels, the reduction in male sex organ weight is exacerbated, and sex organ malformations are seen, such as reduced penis size, ectopic testes, vaginal pouches, hypospadias, and additional ambiguities of the urogenital system. In some studies reduced fertility from the hypospadias, delayed puberty and kidney stones were noted. Since the androgen receptor is widely conserved across species lines, antiandrogenic effects would be expected in humans. However, the human consequence of many of the low dose effects in male rats such as reduced anogenital distance, areola and nipple development, and reduced prostate weight is unknown. Vinclozolin and/or its metabolites cause Leydig cell (testicular) tumors in rats. There is also evidence in the published literature that vinclozolin may affect the development and function of the neuroendocrine system. The Agency has also determined that vinclozolin's terminal metabolite, 3,5-dichloroaniline (3,5-DCA), should be regulated based on potential carcinogenic concerns. 3,5-DCA is a common metabolite of two related fungicides, iprodione and procymidone.

Dietary Exposure

People may be exposed to residues of vinclozolin and its metabolites containing the 3,5-dichloroaniline moiety through the diet. Tolerances or maximum residue limits have been established in 40 CFR §180.380 for: succulent beans; Belgian endive tops; cucumbers; wine grapes; kiwifruit; leaf and head lettuce; dry bulb onions; bell peppers; raspberries; stonefruits except plums/fresh prunes; strawberries; canola; milk; cattle fat, meat, and meat byproduct; eggs; poultry fat, meat and meat byproduct; sheep fat, meat and meat byproduct; goat fat, meat and meat byproduct; hog fat, meat and meat byproduct; horses fat, meat, and meat byproduct.

The following tolerances do not need to be amended at this time: wine grapes, canola and the animal products associated with canola in feed. All other tolerances will be proposed for revocation within the next few years after use cancellation.

Risk From Food

For vinclozolin, acute, chronic and carcinogenic dietary risk from food is not of concern. Cancer dietary risk from 3,5-DCA in food is also not of concern (<1 x 10⁻⁶).

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Risk From Food + Drinking Water

Model estimates of potential drinking water exposure from ground and surface water sources are not of concern for vinclozolin. Based on screening-level models, carcinogenic dietary risk from vinclozolin-derived 3,5-DCA in drinking

water is above the Agency's level of concern. 3,5-DCA exhibits fate properties (high mobility and persistence) of pesticides which may be found in ground and surface waters.

Risk From Non-dietary Exposure

There are no vinclozolin pesticide products registered for use by homeowners. Vinclozolin can, however, be occupationally used in a manner that may lead to post-application exposures to golfers playing on treated golf courses and homeowners and their families coming into contact with or playing on sod which has been previously treated on a sod farm. No chronic exposures or exposures of sufficient duration to cause cancer were identified. The short-/intermediate-term risk to golfers of all age ranges is below the Agency's level of concern. Risks to toddlers playing on treated sod fall beneath the Agency's level of concern 24 days after application. To mitigate the unacceptable risk resulting from exposure before the 24 day period has elapsed, the registrant has submitted label amendments deleting use on sod farms (except for transplant onto golf courses), and has begun the immediate restickering of all product in the channels of trade to require a 24 day period before sod can be harvested. Although the Agency's level of concern would have been exceeded, the risk reduction measures implemented by the registrant immediately reduce risk such that it is below the Agency's level of concern.

Aggregate Risk

The short- and intermediate-term aggregate risk assessment includes exposure from nonoccupational settings in addition to the dietary (food and water) exposure. When aggregating food and water exposure with toddler's exposure to treated sod, the sod pre-harvest interval (PHI) of 24 days results in short- and intermediate-term aggregate risk below the Agency's level of concern. Food, water, and adult/child golfer exposure do not exceed the Agency's level of concern when aggregated.

EPA also considered the relative contribution of vinclozolin-, iprodione- and procymidone-derived 3,5-DCA. The aggregate food-only cancer risk associated

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with 3,5-DCA derived from **all three** of these imide fungicides is not of concern ($<1 \times 10^{-6}$). However, the vinclozolin- and iprodione-derived 3,5-DCA EECs alone exceed the carcinogenic aggregate DWLOC indicating a potential for concern.

Occupational Risk

Workers can be exposed to vinclozolin during handler activities such as mixing, loading, applying and flagging, or by re-entering treated sites. Occupational risk estimates were not considered for onions, raspberries and ornamentals because the registrant has requested immediate cancellation. Only one handler scenario, applying with an airblast sprayer (kiwi), indicates the need for an increase in protection beyond current label requirements. Lettuce, kiwi and turf pose a postapplication risk concern, i.e., the Agency does not believe that the currently labeled REIs are of sufficient duration to protect workers from exposure to residues of concern.

FQPA Considerations

EPA has determined that the established tolerances for vinclozolin, with amendments and changes as specified in this document, meet the safety standards under the FQPA amendments to section 408(b)(2)(C) of the FFDCFA, that there is a reasonable certainty of no harm for infants and children. The safety determination for infants and children takes into account the possibility of increased dietary exposure due to the specific consumption patterns of infants and children,

as well as the possibility of increased susceptibility to the toxic effects of vinclozolin residues in this population subgroup.

In determining whether infants and children are particularly susceptible to toxic effects from vinclozolin residues, EPA considered the completeness of the database for developmental and reproductive effects, the nature of the effects observed, and other information. For vinclozolin, the FQPA safety factor of 10 was **retained** because: (1) there is evidence of increased susceptibility to offspring following *in utero* exposure to vinclozolin in the prenatal developmental toxicity study in rats; and (2) a developmental neurotoxicity study in rats with an expanded protocol is required for vinclozolin due to concern for the antiandrogenic properties of vinclozolin and its metabolites.

In accordance with the Food Quality Protection Act (FQPA), the Agency is examining whether, and to what extent, some or all members of the imide group of

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the dicarboximide class of fungicides, which include vinclozolin, iprodione and procymidone, share a common mechanism of toxicity. Although there are data suggesting that these dicarboximide fungicides induce some of the same antiandrogenic effects, the mechanism by which they cause these toxic effects has not been adequately evaluated. As a result, the Agency has not determined if it would be appropriate to include them in a cumulative risk assessment. In addition, there may be other compounds outside of this class of fungicides that may also be considered antiandrogenic. Therefore, for the purposes of this risk assessment, the Agency has assumed that vinclozolin does not share a common mechanism of toxicity with the dicarboximide fungicides or other possible antiandrogens.

Environmental

Assessment

Environmental Fate

Vinclozolin dissipates in the environment by microbial-mediated hydrolysis, soil metabolism, abiotic degradation, and transport with water. Metabolite B is a common degradate of hydrolysis, soil metabolism, and photolysis. The other principal degradation products of vinclozolin are 3,5-dichloroaniline and metabolite E, which appears to be a degradation product of parent and metabolite B.

Metabolite E degrades to 3,5-dichloroaniline. Experimental evidence has shown 3,5-DCA to be resistant to degradation processes.

Vinclozolin and its principal degradates are potentially very mobile to slightly mobile in soil. Metabolites B, E and 3,5-DCA may be transported with water through the soil profile or with surface runoff. Residues are likely to be most mobile in sandy soils low in organic matter.

In terrestrial field dissipation studies, vinclozolin dissipated with half-lives of 34 to 94 days. Half-lives for total residues (vinclozolin plus its dichloroaniline-containing metabolites) were 179 to >1000 days. Persistence of total residues appeared to be attributable to the resistance of 3,5-DCA to degradation and to the inclusion of soil-bound residues in the data. Intermittent detections of residues were reported at soil depths of 12-18, 18-24, and 24-30 inches. 3,5-DCA was detected regularly deeper than 6 inches. Residues may accumulate and be available for rotational crop uptake. Vinclozolin has a low potential to bioaccumulate in fish.

Ecological Effects

Results indicate that vinclozolin is practically nontoxic to birds, mammals, and honey bees on an acute basis. Vinclozolin is moderately toxic to freshwater/estuarine fish and freshwater/estuarine invertebrates on an acute basis.

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Vinclozolin and/or its metabolites have been shown *in vitro* and *in vivo* to be

potent mammalian anti-androgenic compounds, inhibiting androgen receptor binding and gene expression. In addition to the adverse effects observed in the male fetuses in the mammalian species, endocrine disruption effects in birds include reduced egg laying, reduced fertility rate, and reduced hatching successes.

Ecological Effects Risk Assessment

The risk assessment for vinclozolin indicates low levels of acute risk to wildlife. The Agency's level of concern has been exceeded for chronic effects to avian species for most use sites. The registrant has already requested the phase-out of all uses except turf and canola. For canola, all avian chronic RQs are below the level of concern assuming average use rates. For turfgrass, the highest RQ is 2.7, which is slightly above the LOC of 1.0. The registrant has undertaken several mitigation measures on turf during the last few years which reduce risk to nontarget species on turf. Chronic risk to aquatic organisms has not been assessed due to lack of data.

Risk Mitigation BASF, the vinclozolin registrant, has already requested changes to its vinclozolin

registrations, including the phase-out of most uses and new restrictions on turf use. In addition to these measures, EPA is recommending the following risk mitigation measures to lessen the risks posed by vinclozolin.

- To address drinking water concerns, the registrants of vinclozolin and iprodione should initiate a surface and ground water monitoring program. Ground water and surface water advisory language is warranted on vinclozolin product labels.
- Only the extruded granular formulation packaged in water soluble bags is eligible for reregistration.
- Labels should specify enclosed cabs for airblast applicators.
- An advisory statement should be added informing crop advisors to wear early entry PPE when entering treated sites during the REI.
- A label statement should be added to the 24(c) label for chicory informing employers of chicory root workers that they must ensure that workers in the chicory root spray area wear the PPE required for applicators. Employers must provide, clean, and maintain all PPE.
- The REI for kiwi should be increased from 24 hours to 6 days. The REI on sod farm turf should be increased from 12 hours to 5 days. The REI for lettuce should be increased from 12 hours to 7 days. An exception to the 7 day REI may be established for applications to lettuce taking place within 9

35 days of planting. Under this exception, workers may enter to perform some tasks after 24 hours.

- A double notification statement must be included on labels. Workers will be notified of applications orally and by posting.

Additional Data The following additional generic studies for vinclozolin are necessary to confirm its

regulatory assessments and conclusions:

The Agency has determined that a developmental neurotoxicity (DNT) study is warranted; however, the kinds of perturbations likely to occur with androgen/estrogen disruptor cannot be identified by the standard guideline DNT study. Consequently, the DNT study will be due 3 years after the Agency determines the protocol necessary to assess the relevant endpoints.

In addition to the water monitoring data, environmental fate studies will be requested in order to better understand the persistence and mobility of the degradates. Some ecotoxicity studies were required in a previous DCI and are

still outstanding. The registrant is in the process of submitting the studies.

Product Labeling

Changes

All vinclozolin end-use products should comply with EPA's current pesticide product labeling requirements and with the label changes outlined in the RED document.

Regulatory

Conclusion

The use of currently registered products containing vinclozolin in accordance with approved labeling will not pose unreasonable risks or adverse effects to humans or the environment. Therefore, all uses of these products are eligible for reregistration. This decision takes into consideration the registrant's request to cancel most currently registered uses of vinclozolin.

Vinclozolin products will be reregistered once the required product-specific data, revised Confidential Statements of Formula, and revised labeling are received and accepted by EPA.

For More

Information

EPA is requesting public comments on the Reregistration Eligibility Decision (RED) document for vinclozolin during a 60-day time period, as announced in a Notice of Availability published in the Federal Register. To obtain a copy of the RED document or to submit written comments, please contact the Pesticide
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Docket, Public Information and Records Integrity Branch, Information Resources and Services Division (7502C), Office of Pesticide Programs (OPP), US EPA, Washington, DC 20460, telephone 703-305-5805. Electronic copies of the RED and this fact sheet are available on the Internet. See <http://www.epa.gov/REDs>. Printed copies of the RED and fact sheet can be obtained from EPA's National Service Center for Environmental Publications (EPA/NSCEP), PO Box 42419, Cincinnati, OH 45242-2419, telephone 1-800-490-9198; fax 513-489-8695.

Following the comment period, the vinclozolin RED document also will be available from the National Technical Information Service (NTIS), 5285 Port Royal Road, Springfield, VA 22161, telephone 1-800-553-6847, or 703-605-6000.

For more information about EPA's pesticide reregistration program, the vinclozolin RED, or reregistration of individual products containing vinclozolin, please contact the Special Review and Reregistration Division (7508C), OPP, US EPA, Washington, DC 20460, telephone 703-308-8000. For information about the health effects of pesticides, or for assistance in recognizing and managing pesticide poisoning symptoms, please contact the National Pesticide Telecommunications Network (NPTN). Call toll-free 1-800-858-7378, from 6:30 am to 4:30 PM Pacific Time, or 9:30 am to 7:30 PM Eastern Standard Time, seven days a week. Their Internet address is ace.orst.edu/info/nptn.