

Session B: Laws and Regulations

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Clopyralid in Compost

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Introduction

The observation that clopyralid residues could survive the composting process in trace amounts first came to light in Washington State. During 2000 and 2001, residues of clopyralid were detected in commercial compost. Compost made at a municipal site damaged tomatoes and other garden plants planted in it. The lawn clippings feedstock was tested and found to contain clopyralid residues up to 1.5 ppm. As news of this condition became public knowledge, California compost producers and municipalities with green waste recycling programs became concerned the possible presence of clopyralid residues in finished compost may damage consumer confidence in compost products. In a few locations, the demand for compost has fallen off and some compost has been hauled off to landfill sites. Organic growers are particularly sensitive to the possibility the compost they are using may have trace amounts of clopyralid. Their industry dictates they must grow crops using only natural occurring pesticides like copper and sulfur. The composting industry and the California Integrated Waste Management Board (CIWMB) view this condition as a threat to the successful recycling programs for municipal green waste that were initiated in response to Assembly Bill 939. Many communities have green waste recycling programs that collect lawn clippings as part of the program. The urban pesticide applicator needs to determine whether green waste from treated turf sites is being recycled before clopyralid is used for weed control.

Clopyralid Properties & Products

Clopyralid is a selective herbicide used to control weeds in agronomic crops (asparagus, hay, small grains, sugar beets), lawns, pasture and rangeland, and rights-of-way. Clopyralid is a growth regulator-type herbicide with activity on a relatively narrow range of broad-leaf weeds. It is relatively stable in the environment.

I. Physical-chemical properties:

- Soluble in water
- Does not degrade readily in water
- Low volatility
- Field conditions- average half-life in soil 25 days (range 8-66)
- Low soil absorption rate

II. Clopyralid activity:

- Auxin type herbicide- disrupts plant growth processes
- Enters plant through leaves & roots
- Systemic- moves rapidly through plant, collects in meristems
- Symptoms- thickened & twisted leaves, stems; cupped leaves
- Has contact & pre-emergent activity

III. Sensitive plant families

- Asteraceae (Composites)- asters, dandelions, prickly lettuce, sowthistle, yellow starthistle
- Fabaceae (Legumes)- beans, clovers, peas, vetch
- Solanaceae- nightshades, jimsonweed, potato, tomato
- Polygonaceae- curly dock, knotweed

IV. Clopyralid toxicity:

Clopyralid has low acute toxicity to humans via the dermal, inhalation and oral routes of exposure and has been designated as a category III pesticide. Similarly, wildlife studies indicate that clopyralid is slightly toxic to birds and relatively non toxic to aquatic life.

Clopyralid is marketed as a concentrate product or sold in combinations with fertilizer as “weed and feed” products for turf care. Currently there are 14 clopyralid products registered in California with Dow AgroSciences as the primary registrant. In the year 2000, the majority of the clopyralid use reported to the California Department of Pesticide Regulation (DPR) was from products registered for agronomic and rangeland-rights-of-way uses. Products registered for lawn and turf uses accounted for about 33% of the reported use for that year. Commercial lawn maintenance companies, golf course operators and growers value clopyralid for its safety and ability to control some problem weed species with only one to two applications per season. Golf courses in particular value its ability to control clover in the fairways and rough areas.

The Dow AgroSciences concentrate product labels with turf uses advise the user not to use treated grass clippings for mulch or to make compost from the treated grass clippings during that season of use. The Riverdale Chemical concentrate products advise the user to wait 10 or more weeks after treatment before using treated grass clippings for compost or mulch. Most “weed & feed” products do not have any compost or mulching restrictions for treated grass clippings.

Clopyralid and Compost in California

Municipal and private compost producers in California have tested their compost for trace amounts of clopyralid. At a City of San Diego site, residues were detected at 11 ppb. and at one site in Los Angeles at 3-4 ppb. The preliminary results from a voluntary survey conducted by compost industry indicate 13 out of 20 samples tested positive for clopyralid with residue levels ranging from 2-13 ppb. Research by Dow AgroSciences indicates that clopyralid levels as low as 3 ppb. can be phytotoxic to garden vegetables like beans, peas and tomatoes grown in pure compost. At this time, DPR is not aware of any reports of phytotoxicity in California due to compost with clopyralid residues in it.

DPR is working with the CIWMB, Dow AgroSciences, and commercial composters to assess the scope of the problem and to propose mitigation measures. A workgroup has been

formed to gather information and coordinate activities between the two agencies and stakeholders. This workgroup has sponsored a series of stakeholder meetings to gather more information on how clopyralid is used in California and which uses present a potential for contamination of feedstocks for compost. The workgroup has coordinated stakeholder efforts to provide public information on the problem and to promote a compost testing program to generate clopyralid residue data.

Current Research

Dow AgroSciences is currently conducting research to better understand the interaction between clopyralid, turf and compost. These studies include exploring the following relationships:

- a. the impact of product formulation and mowing regimes on residues of clopyralid.
- b. factors that influence the degradation of clopyralid in compost.
- c. Dissipation in turf and how it breaks down.

As part of these studies, the half-life of clopyralid in compost will be assessed. Dow AgroSciences has indicated the studies are largely completed and they intend to publish the results.

Mitigation Actions Taken by Registrants

In the summer of 2002, Dow AgroSciences petitioned the U.S. EPA to delete residential turf uses from their manufacturing use labels and their clopyralid product labels. The company has also requested that text be added to their manufacturing use and their clopyralid product labels requiring applicators making nonresidential lawn and turf treatments to notify property managers about the label requirements regarding compost. The request to delete residential turf uses from their labels was published in the Federal Register August 28, 2002. Other registrants that formulate and sell clopyralid products will have to make these changes to their product labels when they purchase new technical material from Dow AgroSciences.

Dow AgroSciences has initiated a product stewardship program to educate chemical suppliers and users about the persistent nature of clopyralid and the importance of following label restrictions regarding mulching or composting treated lawn clippings. Dow AgroSciences has asked commercial pesticide applicators not to make clopyralid applications to residential turf. The company has held a series of product meetings to reiterate the composting and mulching restrictions on the clopyralid labels. These meetings will also serve to educate users on the potential for trace amounts of clopyralid to enter the composting process through feedstocks. Dow AgroSciences is recommending that site managers wait one year before recycling grass clippings from a clopyralid treated site.

Regulatory Actions Taken

Some regulatory actions have been taken to keep clopyralid residues out of compost. DPR has initiated a cancellation action on all registered clopyralid products which permit use on residential lawns. Use on residential lawns is considered the least controllable use in relation to keeping clopyralid from entering composting feedstocks. The cancellation action does not include clopyralid products registered for agricultural or rights-of-way, rangeland uses. DPR is

currently negotiating with the registrants of clopyralid products regarding possible label changes to protect compost. The use of products affected by the cancellation notice can continue until some final regulatory action is taken. A voluntary recall of clopyralid products with residential lawn uses is not occurring at this time.

The assembly bill (AB 2356 Keeley), sponsored by the composting industry, was passed in September and became effective January 1, 2003. This bill contains limitations on the sale of clopyralid products and requires DPR to take certain actions. The bill requires pesticides that contain clopyralid may only be sold by licensed pest control dealers. It will also require pest control dealers to only sell pesticides with clopyralid labeled for use on lawn and turf including golf courses, to applicators holding a Qualified Applicator Certificate (QAC) or a Qualified Applicator License (QAL). The lawn and turf restrictions do not include use of clopyralid-containing products on lawn and turf located on turf farms, uncultivated open space, agricultural rangeland or cultivated farm land. By April 1, 2003, DPR must make a determination on which lawn and turf uses are likely to cause persistent residues in compost and which uses will not. For those uses that are likely to cause persistent residues in compost, DPR must either impose restrictions on those uses or cancel products allowing those uses.

Suggested Actions for Applicators

There are actions that applicators can take to reduce the risk of compost becoming contaminated with clopyralid. Applicators can contact their local distributors for pesticides to obtain current information regarding the use of clopyralid products. Applicators should contact turf site managers to determine if green waste recycling is taking place before applying a clopyralid product. If grass clippings, leaves are being recycled into compost and moved off-site and the site manager cannot wait one year, the applicator should use another herbicide.