Volume XV, Number 9, September 5, 2001

REPORTING ORBIT USE

The Section 18 permit for the fungicide Orbit (propiconazole) expired on July 31, and now is the time to report use of this product in Wisconsin. All cranberry growers in Wisconsin have received, or soon will receive, a form to record their use of Orbit. If you used Orbit, complete the form and send it no later than September 28 to: Patty McManus, Dept. of Plant Pathology, 1630 Linden Dr., Madison, WI 53706 or fax 608-263-2626.

Reporting Orbit use is required by the EPA, and future Section 18 or regular labels for Orbit will not happen if we don't provide them with use data. If you have comments, concerns, or other observations regarding cottonball, please include this on the form. If you have questions about reporting fungicide use, contact me at 608-265-2047 or psm@plantpath.wisc.edu.

Patty McManus, UW-Plant Pathology

Freedom alone substitutes from time to time for the love of material comfort more powerful and more lofty passions; it alone supplies ambition with greater objectives than the acquisition of riches, and creates the light that makes it possible to see and to judge the vices and virtues of mankind.

Alexis de Tocqueville

FRUIT DISPOSAL

The USDA has announced a volume regulation for the 2001 cranberry crop. Nationally cranberry growers will only be able to market 65% of their sales history. Generally, sales histories are calculated by USDA based on a the amount of fruit a grower has marketed in the past. Representatives from the WSCGA, University of Wisconsin-Extension, Wisconsin Department of Natural Resources, Northland Cranberries, Inc., Cliffstar Corporation, Clement Pappas Company and Ocean Spray Cranberries have worked together to create these fruit disposal guidelines. These guidelines are meant to assist Wisconsin cranberry growers to find acceptable and economical means to dispose of the unmarketable fruit. Through land spreading, cranberries would be considered an organic soil conditioner, containing essential plant nutrients and organic matter that would improve soil tilth and increase organic matter content of soil over time. The residual product would also contain vines and leaves remaining from harvesting. It is estimated that less than 1000 acres will be needed to comply with the USDA volume regulation and comply with environmental standards.

DNR Regulations and Enforcement

NR 518.04, Wisconsin Administrative Code, exempts the landspreading of residual cranberries provided the fruit is applied as a soil conditioner or fertilizer in accordance with accepted agricultural practices and is operated and maintained in a safe, nuisance free manner. These guidelines have been developed through a joint effort by the authors stated above. Landspreading of cranberries from the year 2001 harvest consistent with these guidelines will be in compliance with DNR regulations and may be done without DNR approval. Any other disposal methods may be a violation of Wisconsin's solid waste regulations and may be subject to enforcement action unless DNR approval is first secured.

General Considerations

The authors have established separation distances and other operational considerations for land spreading of residual fruit. If these guidelines are followed, the residual fruit would be presumed to be land applied as a soil conditioner or fertilizer in accordance with accepted agricultural practices and in a safe nuisance free manner. The considerations are:

- 500 feet from residence (250 ft with written permission and soil incorporation)
- 250 feet from private water supply wells
- 1000 feet from municipal well
- 200 feet from surface water and drainage ditches
- 3 feet from bedrock and groundwater
- 6% slope or less for fields used
- 1200 bbls/acre (about 1" of fruit) is the maximum recommended land spreading rate
- local ordinances may affect these guidelines

pH Issues

The effect of land spreading cranberries on soil pH and subsequent soil pH management is a consideration. The soil response to spreading 1200 bbls of fruit per acre is minimal and the impact would be comparable to N applied for a potato or corn crop in subsequent years. Additional liming is not necessary.

Nutrient Content of Cranberries

One reason land spreading is a good means of disposal is that cranberries contain essential plant nutrients that can be recovered by other crops. Cranberries contain the following plant nutrients and fertilizer value per 1000 to 1200 bbls/acre:

TABLE 1

Nutrient	Pounds per Application	Unit Value§	Per Acre Value
N	75 – 90	$0.50/lb	$38 - 45
P	7 – 9	$1.30/lb	$9 - 12
K	100 – 120	$0.27/lb	$27 -32
		Total/a	**$74 - 89**

§ *Based on July 2000 Fertilizer Prices*

Based on recommended application rates, the value of these nutrients is roughly $74.00 to $89.00 per acre. Landowners should consider the nutrients applied and take credit for them when determining fertilizer needs for the crops to be planted the following spring, especially for corn and potatoes.

The ultimate result of shielding men from the effects of folly, is to fill the world with fools.

Herbert Spencer

Guidelines and considerations for landspreading on agricultural cropland.

Stockpiling Before Spreading

Growers may stockpile fruit for no more than 30 days prior to land spreading or other disposal means depending on crop needs (harvest dates) and weather. Stockpile to avoid compression of the fruit and in a manner to prevent off site movement of fruit or juice. Fruit must be spread before ground freezes on cropland (non-hay). Try to use level fields if not incorporating in fall to prevent runoff (less than<6% slope). **General Considerations** would apply. Baiting laws apply.

Wildlife Baiting Laws

When fruit is stockpiled on the surface of any land, deer baiting laws apply. Hunting over hay fields, pastures, fields with other vegetative cover, corn or soybean fields that have been landspread with residual cranberries, in general, would not be considered hunting over bait. Fall incorporation would eliminate any concern over hunting over bait. If residual cranberries are spread on bare agricultural land such as a potato field without an established cover crop, baiting laws would apply until incorporated. It is important that this information be given to any person hunting on such property. **If there are any questions on your specific situation, you should contact your local DNR warden for clarification.**

Soil Types

Most soil types that readily accept manure applications could be considered for fruit applications. Sandy loams and loamy sands as well as other loam type soils will handle the waste better than others. These sandy to loamy soils will also benefit from the addition of nutrients and organic matter. Suitable soils exist in the multi-county area surrounding cranberry producing areas so finding appropriate soil types should not be a major limitation. Fields that are currently in agricultural production offer the best sites. Most row crop, vegetable crop, established hay or pasturelands in rotation to row crops, and other crop fields should be suitable. Limiting factors for soils would be steep fields prone to runoff (greater than a 6% slope), soils with high water tables, sites planted to perennial crops that would limit incorporation, and wet poorly drained sites that might result in standing water. Fruit could be applied to heavy (clay) soils that are currently cropped if it is incorporated.

Incorporation

Cranberries will decompose quickly if they are incorporated into the soil shortly after spreading. However, some cropping systems involve minimal or no tillage (no-till corn). Where corn or soybean stubble remains this residue should be sufficient to keep the berries from moving offsite. Light disking or chisel plowing would be preferred to maintain some cover on the soil during the winter months to prevent soil erosion. Moldboard plowing would not be preferred except when the cropping system to be utilized the following season would warrant moldboard plowing.

Hayfields, Pasture or Other Fields with Permanent Cover

Use lighter rates on hayfields, pastures or other fields with permanent cover—light enough to not smother the crop. This

might be as light as 400 bbls/a. Obviously the fruit would not be incorporated on this land. Mechanically spread fruit over a field. Spreading could be accomplished with a manure spreader or a dump truck with a sander attachment, or other device. **General Considerations** would apply.

Corn & Soybean Fields

1200 bbls/a is a reasonable spreading rate. Nutrient values of cranberries appear in Table #1. Growers are encouraged to include these values when developing nutrient management plans for subsequent crop years. Incorporation could be by chisel plowing or light discing. **General Considerations** would apply.

Potato Fields

Spreading cranberries on fields where potatoes have been harvested in the year of spreading is recommended. UW Extension vegetable specialists believe that cranberries would have minimal effect on the incidence of pathogens in the soil. As discussed earlier, the soil pH impact would also be minimal.

Fruit can be spread over a cover crop at rates (up to 1200 bbls/a) without an adverse impact on the cover crop. Obviously fruit is not fall incorporated in these fields, however, it needs to be incorporated according to crop needs in the spring. If an established cover crop does not exist on the field at the time of spreading, **baiting laws** would apply unless incorporated. The crop residue should keep the cranberries from moving offsite. **General Considerations** would apply.

Bare Agricultural Land

Provided that the fruit is incorporated and the **General Considerations** are followed, these lands can be used for fruit disposal. Bare agricultural land includes, for example, land that has been plowed, disced or otherwise had the vegetative cover removed.

Animal Rations

Timing for making silage compared to cranberry harvest may be compatible. Cranberries can be an acceptable component of livestock rations. Research in the 1970's showed favorable results of feeding a cranberry high moisture corn silage mixture to dairy cows. The cows fed well on the cranberry-corn mixture of about 30% cranberries. Fruit could be mixed when silos are filled or bunker silos could be capped with a layer of cranberries. The acidity of the fruit should aid in the fermentation process of the silage.

Wildlife Feeding

Small piles of cranberries can be established for feeding wildlife such as deer. If the area is to be hunted over, **baiting laws** apply.

UNACCEPTABLE OR PROHIBITED PRACTICES

Manure Storage Pits

This is not a recommended practice.

Spreading on Non-Agricultural Land

This practice is not covered under the exemption for land spreading allowed by the DNR. This prohibits fruit disposal on forested or other non-agricultural lands without DNR approval.

Burying

This is not an acceptable means of disposal unless a case specific written approval is obtained from the DNR.

Composting of Fruit

This is not a permitted or viable practice.

This document was produced by:

Tom Lochner, Wisconsin State Cranberry Growers Association

Teryl Roper and Tod Planer, University of Wisconsin-Extension

Peter Huettl, Applied Environmental Sciences , Inc.

Michael Miller, Wisconsin Department of Natural Resources

Jim Peterson, Ocean Spray Cranberries, Inc.

Jerry Bach, Northland Cranberries, Inc.

Henry Knoepker, Cliffstar Corporation

Tom Asselin, Gardner Trucking for Clement Pappas Company

Ron Kuehn, DeWitt, Ross & Stevens S.C.

PERSONAL PROTECTIVE EQUIPMENT

Pesticides are important tools for agricultural production. They are economical means to keep pest populations below economic injury thresholds. When used in accordance with label directions they are safe and effective. However, when misused they pose risks to applicators and the environment. The label is the law and must be strictly followed.

With cranberry harvest approaching following the pre-harvest intervals is critical. These intervals between application and harvest allow pesticides to decompose so residues are below the tolerance for that product. Pushing the limits on pre-harvest intervals may lead to high residues that may exceed established tolerances.

People who mix, load, and apply pesticides are at greatest risk of pesticide poisoning. Pesticide labels list personal protective equipment that must be worn when using each product. Pesticide absorption through the skin is greatest on the hands and in the groin area. Wearing resistant gloves and an apron will greatly reduce workers' exposure to pesticides. The personal protective equipment requirements are included to protect agricultural workers. The required equipment may not be comfortable, but it will protect against exposure.

As I have driven around the state this summer I have seen several incidents where workers are not wearing appropriate personal protection equipment. The most common infraction is for wiping Roundup herbicide. The label requires applicators to wear a long sleeved shirt and long pants, shoes plus socks, and some formulations require eye protection *(I would also recommend waterproof gloves)*. The most common infraction is not wearing a shirt. I have seen people wiping Roundup with "hockey sticks" without shirts. I have seen people walking behind wipers without shirts. I have seen people on self-propelled wipers without shirts and wearing shorts. All are in violation of the label.

While Roundup is relatively non-toxic with an oral LD_{50} of 4,900 mg/kg body weight, prolonged exposure may pose other risks. Wearing the appropriate PPE will reduce your exposure to the pesticide and will minimize any long-term health risks. Following the label protects you and your workers.

Teryl Roper, UW-Madison Extension Horticulturist

Date	Tmax	Tmin	Tmax	Tmin	Tmax	Tmin
	°F	°F	°F	°F	°F	°F
	Cranmoor		Warrens		Manitowish	
24-Aug-2001	75	61	75	65	76	56
26-Aug-2001	83	58	83	56	80	56
27-Aug-2001	80	55	81	55	77	50
28-Aug-2001	79	51	78	50	77	47
29-Aug-2001	77	58	76	55	77	54
30-Aug-2001	78	60	78	57	75	59
31-Aug-2001	67	48	68	46	61	42
1-Sep-2001	70	42	71	41	66	40
2-Sep-2001	78	53	78	52	80	57