Chronic/Carcinogenicity: No evidence of carcinogenicity or other treatment-related effects following chronic exposure in laboratory animals.

Teratology/Developmental Toxicity: No evidence of developmental toxicity....

The Veranda™ O label carries a CAUTION designation along with the following information:

... Harmful if absorbed through the skin, swallowed, or inhaled. Causes moderate eye irritation. Avoid contact with skin, eyes or clothing. Avoid breathing dust or spray mist. Wash thoroughly with soap and water after handling. Remove and wash contaminated clothing before reuse....

All mixers, loaders, applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Socks
- Shoes
- Chemical-Resistant gloves made of any waterproof material....

This pesticide is moderately toxic to aquatic invertebrates and fish. Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwater or rinsate. Do not allow runoff into lakes, streams, ponds or public waterways. Drift and runoff may be hazardous to aquatic organisms in water adjacent to treated areas.

Granules exposed on soil surface may be hazardous to fish and aquatic invertebrates. Collect granules spilled during loading....

... Keep children and pets out of treated area until sprays have dried....

Veranda™ O is for use in controlling or suppressing certain diseases on ornamentals.

Apply Veranda™ O as a preventive or curative treatment in conjunction with good turf and ornamental management practices....

MIXING AND APPLICATION ...

Foliar Diseases	*Rate*	*Application Notes*
Anthracnose (**Colletotrichum**)	0.25-0.5 lb per 100 gallons per acre	Apply as a foliar spray every 7-10 days.
Botrytis blight (**Botrytis cinerea**)		Apply prior to disease development and when conditions are conducive to disease development.
Curvularia		
Downy Mildew (**Pernospora** species, **Plasmopara** species)		
Powdery Mildew (**Oidium** species, **Erysiphe** species, **Sphaerotheca** species)		
Rhizoctonia aerial blight (**Rhizoctonia solani**)		
Alternaria blight (**Alternaria panax**)	0.5 lb per 100 gallons per acre	
Apple scab (**Venturia inequalis**)		

Root and Crown Diseases	*Rate*	*Application Notes*
Rhizoctonia root and crown rot (**Rhizoctonia solani**) ...	0.25-0.5 lb per 100 gallons per acre	Apply as a soil drench every 14-28 days.

- Use in alternation with fungicides that have different modes of action....

Three Repellents Found *Not* to Stop Sapsucker Feeding

Researchers at Bartlett Tree Research Lab sprayed three commercially available repellents on the trunks of sugar maples (**Acer saccharum**) that already exhibited bark wounds (horizontally arrayed holes) due to feeding by yellow-bellied sapsuckers (**Sphyrapicus varius**). Repellents included Tree Guard® from Becker Underwood, Ames, Iowa (0.2% Bitrex, undiluted); Rejex-it Crop Guardian™ from Ceannard, Inc., Gastonia, North Carolina (14.5% methyl anthranilate, diluted at a rate of 16 ounces per gallon of water); and Spotrete F™ from Cleary Chemical Company, Dayton, New Jersey (42% Thiram, diluted at a rate of one quart per three quarts of water plus eight ounces of ClearSpray™ from Cleary Chemical Company). Spraying was done in October and November 2006; evaluations were made during October, November, and December 2006, and in late January 2007.

Numbers of "active" sapsucker wounds (with exposed live phloem and no callus growth) on sprayed trees were never significantly lower than on unsprayed trees. In late January 2007, there were actually *more* wounds, on average, on sprayed trees than on unsprayed trees: under 50 with no spraying, nearly 100 with Spotrete F™, nearly 150 with Crop Guardian™, and slightly over 200 with Tree Guard®.

There is an effective, though labor-intensive, technique for preventing sapsucker damage to trees: wrapping trunks with burlap (or other kinds of fabric) in the fall and removing the fabric in the late winter.

Reference: E. Thomas Smiley (Bartlett Tree Research Lab, 13768 Hamilton Rd., Charlotte, NC 28278), Donald C. Booth, and Liza Wilkinson, "Sprays Ineffective for Preventing Sapsucker Damage on Sweet Maple (**Acer saccharum**)," *Arboriculture & Urban Forestry 35*(1), January 2009, 20-22. (International Society of Arboriculture, P.O. Box 3129, Champaign, IL 61826.)

Identifying *Less*-Invasive Norway Maple Cultivars

Because most Norway maples (**Acer platanoides**) are capable of generating large amounts of seeds that can result in high populations of shade-tolerant seedlings that can outcompete native vegetation, these trees are labeled as potential invaders in several regions of the U.S. But some Norway maples tend to produce fewer viable seeds than do others, meaning that the species *as a whole* doesn't really deserve the "invasive" label. Norway maple cultivars that are exceptionally poor seeders include 'Crimson King', 'Globosum', 'Faasen's Black', and 'Rubrum', based on a three-year study of trees at Holden Arboretum and Dawes Arboretum in Ohio. Even though 'Rubrum' flowered heavily in one of the study years, its seed production was quite low. The researchers who conducted the study concluded that the four cultivars named above (the first two of which are easily available commercially) are "suitable alternatives for landscape use where invasiveness is a concern."

Reference: Janine R. Conklin (Dept. of Horticulture, Pennsylvania State University, 310 Tyson Bldg., University Park, PA 16802) and James C. Sellmer, "Flower and Seed Production of Norway Maple Cultivars," *HortTechnology 19*(1), January-March 2009, 91-95. (American Society for Horticultural Science, 113 S. West St., Suite 200, Alexandria, VA 22314-2851.)