



# ***Wine Grapes and Avian Control® Bird Repellent***

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# How Can Avian Control® Work For You?

## Effective

Avian Control® Bird Repellent has proven effective at significantly reducing bird predation on grapes (both wine and table) and other crops. Simply spray your vineyards with Avian Control® to create an unpleasant experience for these unwanted winged pests. Avian Control works by stimulating the trigeminal nerve in the bird's head to create an unpleasant or uncomfortable sensation.

Avian Control® repels only birds. It has no effect on humans or domestic animals. In fact, the active ingredient in Avian Control® Bird Repellent, methyl anthranilate (MA), is widely used in foods designed for human consumption.

## Non-Toxic

All of the ingredients in Avian Control® are found in food products designed for human consumption. The US Food and Drug Administration has classified all of the ingredients in the Avian Control® formula to be "Generally Regarded As Safe" (GRAS) (21CFR182.60)

In addition, the US EPA has determined that the active ingredient of Avian Control®, methyl anthranilate, is free from any residual tolerance requirements (40 CFR Part 180 [OPP-301127; FRL-6780-9] RIN 2070-AB78 *Methyl Anthranilate; Exemption from the Requirement of a Tolerance*).

## A Natural Compound

Methyl anthranilate (MA) occurs naturally and is found in bergamot, black locust, gardenia, jasmine, lemon, mandarin oranges and strawberries. MA is completely biodegradable, as are all of the ingredients in the Avian Control® formula. The chemical formula for MA is C<sub>8</sub>H<sub>9</sub>NO<sub>2</sub>; carbon, hydrogen, nitrogen and oxygen. These are elements that are essential for all life.

Methyl anthranilate is not foreign to grapes. As stated in *Wine Science: Principles and Applications* (Ronald S. Jackson): "Methyl anthranilate is also produced in small quantities in several *V. vinifera* cultivars, such as Pinot noir, Riesling and Silvaner".

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# The Taste Is Unchanged

Several side-by-side tests, by vintners, of Avian Control® treated and untreated grapes from the same field showed no difference in taste, aroma, bouquet, complexity or color.

There have been no reports of unexpected changes in any wine made with grapes that have been treated with Avian Control®. *The first reason is that the active and inert ingredients in Avian Control® do not penetrate the skin of the fruit. Avian Control® will not translocate into the treated crop.* Translocation is the tendency of a compound to move through the tissues of a plant. This effect is particularly troubling when repellents translocate from the outer skin of a fruit through the skin and into the fruit body. When this occurs, a distinct change in taste can be noticed. Due to its unique formulation, Avian Control® remains on the surface of the plant and its fruit where it is available to repel birds and does not translocate into the plant or its fruit, preserving the natural taste of the crop. This is an important difference between Avian Control® and other bird repellent products currently available.

The second is the very low rate of application of Avian Control and its positive biodegradability profile. When applied to your grapes at the highest recommended rate of 32 oz. per acre, based upon a yield of

three tons of grapes per acre, the level of active ingredient is only 0.6 parts per million. For a yield of 6000 pounds of grapes per acre, only 6.4 ounces of MA is being applied to the grapes. Given the biodegradability of MA, after several days the amount is even lower. When MA biodegrades, it breaks down into the simple elements of carbon, hydrogen, nitrogen and oxygen, all found naturally in grapes. Other bird repellants with MA require application rates of six to ten times higher than Avian Control®.



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# A “Foxy” Odor?

The active ingredient in Avian control® has been incorrectly accused of creating a “foxy” odor in wine. The following citation puts an end to that misconception.

“However, researchers point to another compound present in Concord and other *V. labrusca* grapes that has a similar ‘foxy’ or ‘grapy’ aroma: ortho-amino acetophenone (OAP). Although present in grapes in much smaller quantities than Methyl anthranilate, humans are able to detect it at a lower threshold, thus it is believed that it may play a greater role in the distinctive foxy aroma of *V. labrusca* grapes.” *The serendipitous discovery of ortho-amino acetophenone as the ‘foxy’ smelling component of Labruscana grapes* (Acree, T.E., E.H. Lavin, R. Nishida, and S. Wantanabe, 1990).

Due to MA's simple chemical structure, its rapid biodegradability and the extremely low level of dosing, Avian Control® does not interfere with or alter the natural progress of the fermentation process.

*Degradation Studies of the Non-lethal Bird Repellent, Methyl Anthranilate*, (Aronov & Clark), two noted USDA APHIS researchers, states: “There was no evidence of aromatic breakdown products in any microbial degradation studies”.



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**Avian Control® Bird Repellent provides the vigneron with a bird control technology that repels feathered pests, that is easy to apply and economical, is not phytotoxic, and has no impact on the fine wines produced from the treated grapes.**