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Determination of Mesurol (Methiocarb) in Oregon Wines

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The following is a report on a limited survey we conducted testing for the presence of Mesurol (Methiocarb) in Oregon wines. This study was undertaken as a result of recent publicity (resulting from testing in British Columbia) concerning the finding of Methiocarb residues in some wines, including Oregon wines; and in response to a WAB request to conduct the study and to review the "status" of Mesurol (1).

A selection of Oregon wines from the four main varieties (P. Noir, Riesling, Chardonnay, Gewurztraminer) and from two vintages (1983, 1984) were analyzed for Methiocarb residues. Determination of Methiocarb and its metabolites was by the procedure used in earlier OSU studies (2), which utilizes the oxidation of residues to Methiocarb sulfone, derivatization with methanesulfonyl chloride and chromatography. Confirmation/identification of Methiocarb was also obtained by mass spectrometry.

A total of 24 bottles of wine have been analyzed (Table 1) representing 12 different wines, 2 bottles of each (20 bottles of commercial wines and 4 bottles of OSU experimental wines). The OSU wines and wine from a commercial winery were selected as "control" wines as these came from vineyards which did not use Mesurol.

Table 1. MESUROL (METHIOCARB) CONTENT OF OREGON WINES

Wine Samples Analyzed:

<u>OSU (control)* Wines</u>	<u>Mesurol (Methiocarb) content, ppm</u> (duplicate bottles)**	
1. Lewis Brown Farm, P. Noir, 1983.	N.D.	N.D.
2. Lewis Brown Farm, Riesling Sylvaner, 1984	N.D.	N.D.
Commercial Wines		
3. Riesling, (control)* 1983.	N.D.	N.D.
4. Riesling, 1984.	0.2	0.2
5. P. Noir, 1983.	0.9	1.0
6. P. Noir, 1984.	0.2	0.3
7. P. Noir, 1984.	0.2	0.1
8. P. Noir (control)*, 1984	N.D.	N.D.
9. Chardonnay, 1983.	0.4	0.4
10. Chardonnay, 1984.	0.2	0.2
11. Gewurztraminer, 1983.	N.D.	N.D.
12. Gewurztraminer, 1984.	<0.1	<0.1

* Wines produced from vineyards that were known not to have used Mesurol.

** Two bottles of the same wine randomly selected for analysis.

N.D. = not detected.

The lowest level of detection for our method is 0.03 ppm.

Mesurol (Methiocarb) **was not found** to be present in **concentrations greater than 1 ppm, in any of the wines tested**. No Mesurol (Methiocarb) was detected in "control" wines, i.e. wines produced from vineyards which were known not to have used Mesurol. In addition there were no significant differences in Methiocarb content detected between different bottles of the same wine.

These concentrations of Mesurol are extremely low and well below the Federal tolerances set for 1983 and 1984 vintages (1). However, we would like to re-emphasize that since 1985 there has been no emergency permit issued for the use of Mesurol on grapes (1). This means that no residues of Mesurol (Methiocarb) and its metabolites (zero tolerance) are permitted in 1985 and 1986 wines. (For a more extensive discussion on the "status" of Mesurol refer reference 1).

References

1. Heatherbell, D.A. (1986) Mesurol (Methiocarb): Review of "status" and of OSU related research. Wine Advisory Board Research Report. 2, 10-12. (Published by WAB and Oregon Dept. Agriculture, Salem, OR 97310).
2. Miller, F.K., Kiigemagi, U., Thomson, P., Heatherbell, D., and M. Deinzer. (1985) Methiocarb residues in grapes and wine and their fate during vinification. J. Agric. Food Chem. 33(3):538-545.

