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THE POLLINATION OF OHANEZ GRAPES

*Results from Pollen-Water
Spray Trials 1955-56*

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Fig. 1.—Ohanez grapevines trained on an overhead trellis at Belhus Vineyard, Upper Swan.

UNLIKE most other varieties of grape the Ohanez is not self pollinating, and before its fruit will set its flowers must receive pollen of another variety, i.e., it must be cross pollinated. Grower experience in the Swan Valley has been that interplanting of varieties with reliance on wind-borne pollen has not been satisfactory and, as a result, some form of hand pollination has been practised.

The pollination of Ohanez grapes by spraying the flowering bunches with a suspension of pollen in water was pioneered by Mr. A. R. Stevens and Mr. A. H. Convoy, two growers at West Swan, in 1939. The value of this method was confirmed by the Department of Agriculture (J. Dept. of Agric. W.A. XIX.: 210-213, 1942) and now the spraying method has largely superseded the method whereby Ohanez grapes were pollinated by rubbing the bunches with a sprig of flowers of the pollinating variety.

The advantages of the spraying method are:—

(1) a saving in labour costs and (2) an economical use of pollen when pollen supplies are low.

In the early investigations an examination of the behaviour of pollen in water indicated that it lost its effectiveness if kept in water for very long. Therefore it was recommended that, until further information was obtained, the pollen water mixtures should be used within several hours of preparation. In response to a request from the Export Grape Growers'

Association, investigations were started last season to get more information on this subject.

The behaviour of Black Malaga and Muscat pollen has been investigated and some experiments were carried out on the properties of Mr. T. Barrett-Lennard, Upper Swan and Mr. R. R. Hyne, Millendon.

In these experiments bunches of Ohanez were covered with cellophane bags several days before flowering started. During the course of flowering the bunches were sprayed with pollen-water sprays which had been prepared for periods varying from under one hour to 24 hours. During flowering, each bunch received at least two sprays with the appropriately-aged pollen spray. Several days after flowering finished, the bags were removed and when the setting could be evaluated counts were made of the number of bunches which had set in each treatment. There were 20 bunches in each treatment.

It was found (see table below) that Black Malaga pollen lost its ability to set fruit after it had been in water for some time between three and six hours, i.e., it



Fig. 2.—Cleaning and packing Ohanez grapes at Belhus Vineyard.

is quite safe to use for three hours, and possibly a little longer, but how much longer is a matter for further investigation. This means that if a pollen spray is prepared at say 8 o'clock in the morning then by 2 o'clock in the afternoon it is practically useless as a source of effective pollen. If pollinising is going to take all day, at least two mixtures should be prepared—one for the morning and one for the afternoon.

Effect of Time in Water on Setting Capacity of Pollen.

Age of Pollen Spray	Hours						
	0-1	1-2	2-3	4-5	6-7	8-9	24
Bunches Set							
Black Malaga	44	65	75	*	5	5	0
Muscat	45	16	*	20	5	16	5

The setting with the Muscat pollen sprays was not good and the results cast some doubts on the suitability of this pollen for use in the spray method under the conditions of the experiment. Be-

cause neighbouring vines, which were pollinated by the rubbing method with the same type of pollen, set satisfactorily the poor setting in the experiment must be attributed to some effect of the experimental treatments. The cause may have been due to some reason other than the effect of water on the pollen and until more information is obtained, judgment on the suitability of Muscat pollen for use in the spray method, must be suspended.

Little definite information can be given on what are suitable pollen varieties for use in the spray method. Tests have been carried out on Black Malaga, Muscat, Purple Cornichon, Wortley Hall and Bridal. The results with Black Malaga and Muscat are described above. Purple Cornichon and Wortley Hall can be used, but there is no information on the length of time the pollen remains effective. Bridal is not satisfactory.

Other varieties have been used with apparent success by growers, but in con-

* No sprays applied.



Fig. 3.—An overhead trellis of Ohanez grapevines in the Swan Valley.

sidering these reported results the effect of wind-borne pollen must not be overlooked. It is possible that in many circumstances wind-borne pollen is sufficient, but, because it cannot be relied upon every season and through all the flowering period, hand pollination has to be carried out so that there is no possibility of crop failure through lack of pollination.

SUMMARY

Experiments carried out in the 1955-56 season showed that the life of pollen in pollen-water sprays was limited. Black Malaga pollen was effective for at least three hours. Muscat pollen apparently lost its effectiveness to a much greater degree. The reasons for the inferiority of Muscat pollen are unknown and further trials are proposed.

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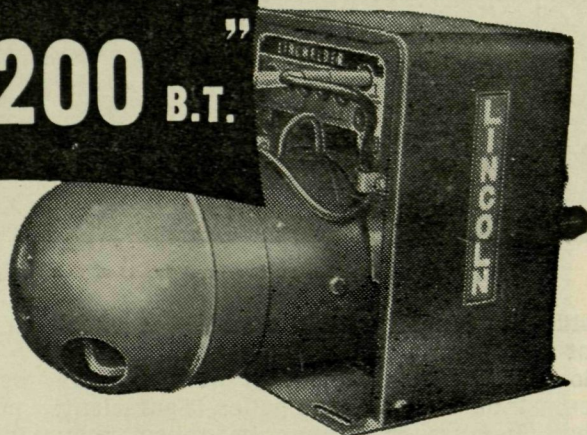
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