

Grape Bud Mite Injury

effect of pruning date on incidence of injury
investigated near Cucamonga in 1949-50 season

M. M. Barnes and A. A. McCornack

Spraying trials have been conducted in southern California over a period of three years concerning control of the grape bud mite, a physiological strain of the grape erineum mite—*Eriophyes vitis*—(Pgst.). During this period approximately 55 acres of plots have failed to provide information concerning the prevention by spraying of the injury caused by this mite. This is because of the erratic nature of the appearance of bud mite symptoms.

In 1949, a Malaga vineyard at Verdmont was observed where approximately one half of the acreage which had been pruned in January was much more severely affected by bud mite injury than the remainder of the vineyard which had been pruned in March.

With the assistance of a vineyard organization at Guasti, the effects of pruning date upon incidence of bud mite injury were investigated during the 1949-50 season.

The data reported herein are from a large-scale trial, but since they represent but one season's observations in one vineyard, they are not presented as a basis for recommendation. They are presented

instead as a background for further study.

In a vineyard near Cucamonga which had shown severe symptoms in 1949, approximately 6,000 Mataro vines were divided into six blocks of 950 to 1,000 vines each. Plots of approximately two hundred vines in each block were pruned during the first part of November, December, January, February, or March. The arrangement of the five plots was at random within each of the six blocks.

The plots were head-pruned by a single

Grape Bud Mite Injury Ratings and Average Yield of Plots with Different Pruning Dates, Mataro Grapes, Cucamonga.*

Pruning date	Bud mite injury ratings			Average yield (tons per acre)
	Per cent of vines			
	Severely affected	Moderately affected	Not affected	
Nov. 14, '49....	3	17	80	5.51
Dec. 6, '49.....	5	46	49	4.93
Jan. 4, '50.....	23	60	17	2.70
Feb. 2, '50.....	43	46	11	2.96
Mar. 3, '50.....	1	24	75	5.58
Least significant difference at 19:1—				.81
Least significant difference at 99:1—				1.27

* Data represent records from approximately 1150 vines for each pruning date.

pruning crew on the dates indicated in the accompanying table.

Observations on the status of bud and shoot development were made during the first week in April. Vines pruned in February were the most developed, shoots being one to two inches in length. On vines pruned in January and December, shoots were approximately equal and about one inch in length. Vines pruned in November and in March were late in developing, buds being swollen, but no shoots having developed. March-pruned vines were somewhat later than November-pruned vines.

During the last week in May each vine was rated as to the incidence of bud mite symptoms into one of three classifications: 1, severely affected; 2, moderately affected; and 3, not affected. At harvest, records were made of the box yields of each of the 30 plots. In this unirrigated vineyard a yield of 5.5 tons per acre would be considered within the normal range.

The plots pruned in November or in March had distinctly less bud mite injury and yielded from 80% to over 100% more grapes than those pruned in January or February. Plots pruned in December showed more symptoms than those pruned in November or March, but were less affected than those pruned in January or February. The December-pruned vines yielded over 60% more grapes than those pruned in January or February. The February-pruned plots were somewhat more severely affected than those pruned in January according to the injury ratings, but there was no significant difference in the yield between these pruning dates.

Since bud mite injury may affect certain sections of a given vineyard more severely than other sections, and since this variation can not be predicted, it is suggested that plots concerning the effect of pruning date on bud mite injury be set up in random order and in duplicate or triplicate across a given vineyard, so that this variable factor may be reduced in its effect upon the results of the trial.

M. M. Barnes is Assistant Entomologist, University of California College of Agriculture, Riverside.

A. A. McCornack is Farm Advisor, San Bernardino County, University of California College of Agriculture.



Grape bud mite injury. Left, shoot from unaffected vine. Right, shoot showing bud mite injury characterized by shortened internodes and stunting of the leaves.