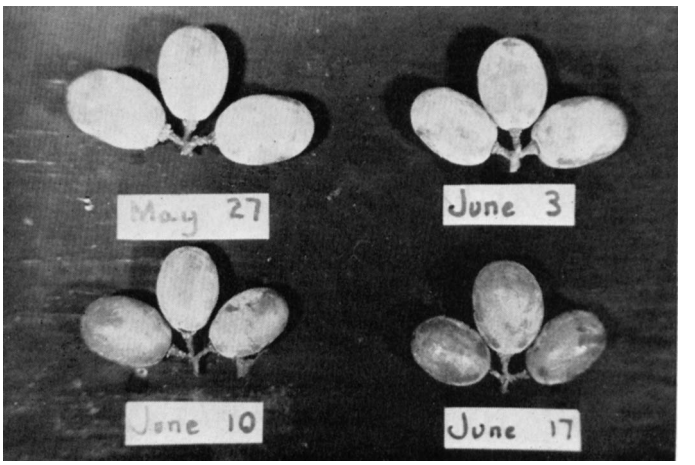
TREES BY THE BORER

Some of the trees were killed by extreme drought conditions and severe sunburning before borer infestations occurred. All treatments were better than the untreated check; however, the dieldrin spray was much better than the other sprayed treatments. Exterior white latex paint either with or without insecticides was better than either the sprayed or untreated trees. Exterior white latex paint plus insecticides was no better than exterior white latex paint used alone.

A single application of exterior white latex paint applied to trunks of young trees before flatheaded borer egg deposition, but after bud break, prevented sunburn and subsequent borer attack. An application of this material made before bud break may delay bud development; an application to the foliage may cause leaf damage.

L. B. McNelly is Extension Technologist, San Jose; D. H. Chaney is Farm Advisor, Sutter County. G. R. Post was Farm Advisor, Sutter County; and C. S. Davis is Extension Entomologist, University of California, Berkeley. *Assistance with plot and laboratory work was obtained from Hillary Ewing, Laboratory Assistant, U.C., Berkeley. Orchard space, storage space and assistance with plot work were furnished by Mel Nunes and Ed Sarmento, Sutter County ranchers. The above work was supported in part by the United States Public Health Service Grant UI535-03, Solid Waste Program, Environmental Control Administration, National Center for Urban and Industrial Health.*



Typical Thompson seedless grapes from these tests show no effects on maturity from spray applications timing on dates indicated.

F. L. JENSEN

Effects of TIMING gibberellin sprays for berry sizing on maturity of table Thompson Seedless

The maturity of table Thompson Seedless was not affected in these tests by the time of application of berry-enlarging sprays of gibberellin, whether the sprays were applied when the grapes were at the shatter stage or at one, two, or three weeks after shatter. The shatter and shatter-plus-one-week treatments did produce larger berries than did the two later spray treatments.

THE USE OF GIBBERELLIN to enlarge the size of Thompson Seedless berries has been a standard commercial practice of table grape producers for several years. The sprays are applied after the normal shatter following bloom has occurred, usually in early June. Previous work has shown that the greatest size increases are obtained from sprays applied shortly after shatter has occurred. The effect of spray timing on maturity has been less extensively studied, especially of sprays applied within the period shortly after shatter.

The effects of timing on fruit maturity were tested in a trial established in cooperation with D'Arrigo Bros., whose vineyard was located in northern Tulare County, south of Reedley. A 40-part-per-million concentration of gibberellin was used for the berry enlarging sprays with 3 ounces of Triton B 1956 per 100 gallons of water used as a spreader-sticker. Approximately 235 gallons of spray were applied per acre. A randomized complete block design was employed with three replications of each treatment. Each plot consisted of a row through two blocks, or about 160 vines.

First Treatment

The first treatment was applied on May 27, when shatter had been completed on about 95 per cent of the clusters. Weekly applications followed on June 3, 10, and 17.

EFFECT OF TIME OF APPLICATION OF GIBBERELLIN SIZING SPRAYS ON BERRY WEIGHT & MATURITY

Date of application	Berry diameter when sprayed	Weight per berry	Degrees balling	Total tartaric acid
	mm	gms		gms per 100 ml
May 27	4–5	4.64 a*	16.0 a	.82 a
June 3	7–8	4.58 a	16.0 a	.87 a
June 10	9–10	3.97 b	15.7 a	.88 a
June 17	9–10	4.06 b	16.0 a	.91 a

* Means in column not followed by the same letter are significantly different at the 5% level.

Sample berries were harvested on August 8. Four berries were picked at random from each vine for a total of 600 to 700 berries per row. The weight per berry, degrees of Balling, and total acid content of each sample were determined.

Results

The results (see table), show that the timing of the gibberellin spray had no significant effect on either the maturity of the fruit, as measured by the degree of Balling, or on the total acid content.

The berry size showed differences among treatments. The first two spray treatments produced significantly larger berries than the last two, but the differences between the first two or last two were not significant.

At the time of the first two treatments the berries were in the initial stage of rapid berry growth. At the time of the last two, the berries were apparently in the stage of slowed berry growth, the flattened portion or stage 2 of the double-sigmoid curve typical of the growth of berries. The greatest response to gibberellin was obtained by the two applications made during the first rapid growth stage.

Capstem diameter

Another difference observed, but not confirmed by measurement, was the larger diameter of the capstem produced by the first two sprays compared with the last two treatments. After harvest, larger capstems lose moisture more slowly than do smaller capstems and so retain their attractive green color longer.

The vineyard used in this trial received a 10 ppm gibberellin thinning spray at the 60 per cent bloom stage on May 10; the vines were girdled on May 31. The vines were thinned to 20 to 25 clusters per vine with the clusters cut leaving the upper five to seven laterals. These and other cultural practices were those normally employed by the producer.

F. L. Jensen is Farm Advisor, Tulare County.

RH 315

a new herbicide with potential for weed control in lettuce

M. LAVALLEYE · H. AGAMALIAN
A. LANGE · R. BRENDLER

RH 315 is a new experimental herbicide with considerable promise for use in California agriculture. It is not registered for use. This is a progress report of cooperative research on a new product.

SELECTIVE WEED CONTROL in lettuce is essential to the future of mechanized production. Several herbicides will selectively control most summer weed species in lettuce with a margin of safety. Benefin (Balan), an excellent grass killer, also controls several of the important broadleaf weed species. However, it has little effect on hairy nightshade, shepherdspurse, groundsel and related weed species. Bensulide (Prefar), very safe for use in lettuce and an excellent grass killer, is not very effective on many broadleaf weeds including those mentioned above. Neither herbicide is effective on volunteer barley. While IPC is excellent for the control of volunteer barley, it is not very effective on most broadleaf weeds. The combination of benefin and IPC has given excellent weed control in a number of trials, but is somewhat weak on groundsel, sowthistle and shepherdspurse.

A new herbicide, known only as RH 315 (developed by Rohm & Haas Co.) shows considerable promise for the control of annual grasses and many broadleaf weed species found in lettuce. Like all selective herbicides, it is weak on some weeds which are related to the crop species. However, RH 315 controls volunteer barley and many other grass species, and is quite effective on several broadleaf weed species not presently controlled by other lettuce herbicides.

RH 315 caused less injury to lettuce than benefin when used at herbicidal rates. Rates up to 2 lbs per acre of RH 315 caused almost no injury except in one Imperial Valley trial where there was a slight reduction in lettuce stand. The herbicide was noticeably more toxic at 4 lbs per acre incorporated to 3 inches than at only 1½ inches in a Monterey County trial.

TABLE 1. SUMMARY OF 1967–68 WEED CONTROL TRIALS IN LETTUCE

Herbicide	lb/A	Number of trials*			
		Weed control		Safety§	
		Success†	Failure‡	Success	Failure
Benefin	1	8	9	12	0
Benefin	2	3	1	1	3
IPC	3–4	2	6	3	2
IPC	6	2	5	4	3
RH 315	½	4	9	9	0
RH 315	1	13	6	18	0
RH 315	2	18	3	18	1
RH 315	4	12	0	5	5
Benefin + IPC	1 + 3	7	2	6	0
Benefin + RH 315	1 + 1	7	1	8	0

* Number of trials conducted in California: Monterey County—12, Imperial County—1, Ventura County—3, Fresno County—1, Santa Barbara County—1, UC, Riverside—4, and UC, Davis—1.

† Number of trials showing satisfactory weed control (out of 23 total trials).

‡ Failures due to resistant weed species or insufficient incorporation. The trials included pre-plant incorporated, post-plant, pre-emerge furrow and sprinkler irrigation.

§ Number of trials showing safety or loss of stand, early stunting, or symptoms.