The blackberry mite (Eriophyes gracilis Nalepa), prevalent for some time but relatively inactive in the Pacific Northwest, last year did more serious damage to blackberries in Oregon than heretofore. In certain districts a loss of from 50 to 90% of the crop was experienced. This trouble has been present in California for almost ten years and is reported to have been in southern Oregon for several years.

Injury Caused by Mites

The injury caused apparently is mainly that from the feeding of the mite within the fruit. The mite develops and remains at the core of the berry, and at the base of the drupelets, causing the fruit to remain red at harvest time. At picking time many berries which do not show any evidence of injury will remain entirely red, while some may be found with green, red, and fully ripened drupelets.

The Mite’s Life History Followed

The winter is spent in the buds protected by the bud scales. When new growth starts in the spring, the mites also become active. As the flower buds appear the mites work their way into the unfolding buds, into the flowers and down among the developing drupelets, where they feed until late fall. Migration to the buds then takes place where they go into hibernation. During the summer months there are several overlapping generations. All varieties of blackberries apparently are attacked by the mite and reports of its occurrence on loganberries and raspberries have been received.

Control Measures Noted

No opportunity has been afforded to study this pest in Oregon. In California the mite is one of the most serious pests with which blackberry growers have to deal. Entomologists, County Horticultural Commissioners, County Agricultural Agents and growers all agree that commercial production of blackberries in the infested regions of California is impossible unless control measures are undertaken. The application of a dormant or early spring spray of commercial lime sulphur to kill the hibernating forms before they gain entrance into the flowers and berries has given most satisfactory results both in experimental tests and on the farm. The amount of commercial lime sulphur solution used appears to vary with the grower as does the type of spray machine for making the application. Commercial lime sulphur testing 32° Béche in strengths of 4 per cent (4 gallons of lime sulphur solution to 100 gallons of water), 6 per cent or 8 per cent, or corresponding strengths of dry lime sulphur or of soluble sulphur are recommended, with the statement that "apparently 4 per cent is as satis-
factory as the stronger solutions if spraying is well done." California growers, however, favor the stronger solutions of lime sulphur. The improved, highly refined lubricating oil emulsions are also satisfactory, according to the Entomologist of the California Experiment Station. California growers, however, appear to favor the lime sulphur solution and in general are using it in their spray control program.

Control Under Oregon Conditions

Until sufficient work has been completed in Oregon to enable control recommendations to be made with assurance of their being effective, safe and feasible under Oregon conditions, it will be advisable to follow the California control practices in so far as they are applicable here in Oregon.

The following spray program is suggested:

1. Dormant or Delayed Dormant Spray - This spray consists of commercial lime sulphur 32° Baume in strengths of 6 to 8 gallons to 100 gallons of water.

   The ideal time for the application is just as the fruit-stem buds begin to swell or "crack" a little, but good control may be obtained, it is believed, even if the application is made before the buds crack. An application of dormant strength lime sulphur after the fruit-stem bud opens and growth begins may result in injury to the new growth and is not advised.

   No other pests require more thorough and careful spraying to get control than do the Eriophyes mites, the group to which this blackberry mite belongs. Encased in a single bud can often be found several hundred mites. On an infested bush practically every bud may harbor mites. Because of this condition it is essential that each and every part of the canes be covered with the spray.

2. Blossom or Late Spring Spray - Later sprays than the dormant or delayed dormant spray are believed not to be necessary in combating the mite. In case the dormant spray is not effective, however, and the grower finds numerous mites on the fruit stems and in the blossom buds, then a supplemental spray will be of value. The mites may be observed with the aid of a hand lens magnifying twenty times or more. If the grower does not possess a lens, the County Agricultural Agent will assist him in locating the mites. This supplemental spray consists of wettable sulphur 5 pounds to 100 gallons of water. The application is made when the vines begin to blossom and before any of the berries are set. It is inadvisable to apply sulphur sprays after the berries are set because of the detrimental action reported to take place after the berries are canned.

The Oregon Experiment Station has already initiated spray control tests and plans are being made to conduct those tests until such time as a safe and effective spray program can be worked out. If any new or promising material, time or method of application develops, this information will be given the growers through the press and over KOAC.