New Vegetables For California Farms

Family Selection And Progeny Testing Of Onion Varieties For Higher Egg Production

In an abstract of a talk delivered at the Annual Convention of the California Baby onion growers at Santa Barbara, June 4, 1947, Professor J. D. Pearson, Department of Vegetable Pathology and Genetics, University of California, Davis, reported the results of a study on the breeding of onions.

The 1947 production index of the University's production-bred Red Bell onion, which averages 220 eggs per hectare per year.

Before 1933 the average annual production index was somewhere near 120 eggs per ha. In that year the production index was recorded as 100. The production index is the number resulting when the total number of eggs laid by the selected onion is divided by the average of all onions in the flock in the original flock.

The average annual increase of the University's flock as shown by the production index was 5.6 eggs a year, taking into account the chance sizes and falls of production.

Statistical analyses showed that the variance of the production index was due to five different factors: (1) the production of the dam, (2) the record of the sire, (3) the record of the dam's sire, (4) the record of the dam's dam's sire, and (5) the record of the sire's dam.

Four Factors

The amount of the gain in the selection index of the five selection bases adds to the gain in production index the following results when the sons were selected for: (1) the proportion of the flock from each type of selected parent that is selected, (2) the average age of the parents, (3) the selection differentiation, (4) the size of the flock, and (5) the variety.

Cultivation of Onions

The average onion is a relatively small variety, and is selected for its ability to germinate and grow in a variety of soils and climates. It is a hardy root vegetable and is capable of withstanding a wide range of climatic conditions.

Brown 5 was selected to secure a strain with uniformly chestnut brown skin and flesh, and red in color with outer scales. Also, onions with red in color with outer scales are more resistant to blight and bacterial diseases.

Brown 8 was selected to secure a strain with uniformly chestnut brown skin and flesh, and dark red in color with outer scales. Also, onions with dark red in color with outer scales are more resistant to blight and bacterial diseases.

SELECTIVE OILS

Selective oils are those that contain certain unusurtable characteristics in order to harm the more tolerant crops. They are used in the breeding and genetics of the selected onion varieties, and are selected while some oils are selective while others kill all plants, including the crop.

Certain oil fractions, such as aromatic and olefinic compounds, are highly toxic to all vegetation. Certain oil fractions, such as aromatic and olefinic compounds, will kill weeds selectively in certain soils.