SOUTH COAST FIELD STATION

THE SOUTH COAST FIELD STATION was established as a subtropical horticultural station in 1956 in response to the need of the Agricultural Experiment Station to test crops in the coastal and intermediate areas of southern California. This need has become more urgent in recent years as cities and highways are spreading along the coast, forcing many crops farther inland. The South Coast Field Station, ten miles southeast of Santa Ana and ten miles northeast of the coast, provides 200 acres of testing ground under climatic conditions as they prevail in the coastal and intermediate regions from approximately San Luis Obispo County to the Mexican Border.

The Station was created after a decade of deliberation, with the strong support of the California Avocado Society which needed an area where consistently high-yielding and disease-resistant avocado varieties could be developed. Such research is now underway on approximately 22 acres of the Station.

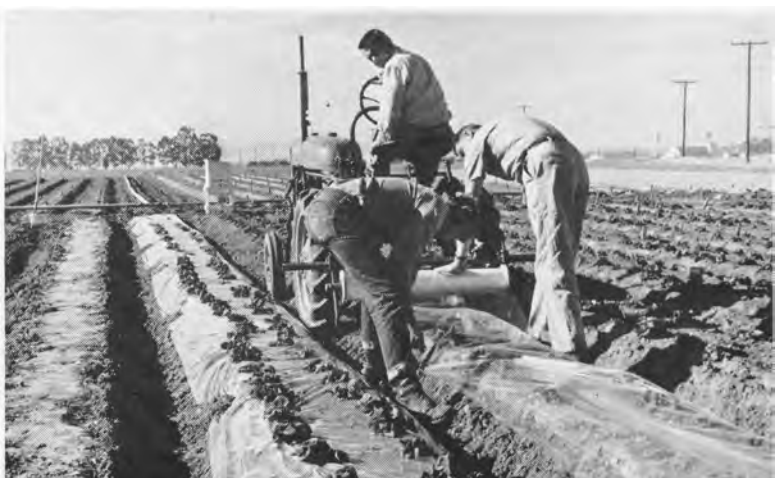
Some 120 acres of the Station are now under cultivation for the 35 experiments listed on this page. Seven new projects totaling 21 acres have been assigned to the remaining 80 acres. Planting material of these projects is being propagated at the Station and at Riverside for 1963–1964 field planting.

During the six years of its existence, the Station has given scientists from many departments of the Experiment Station the opportunity to gain information useful to the growers of the entire state as well as the local areas. Such studies as those of new orange rootstocks or of the stubborn diseases in lemons are by nature long-range and may bring practical results only after many years. The station has, however, contributed a great deal to improved cultural practices, and has helped develop three new strawberry varieties—Solana, Fresno, and Torrey—which many growers of the area are using in preference to the Lassen variety primarily grown here.

The Station provides an ideal place to investigate the virus which wiped out the grape industry in near-by Anaheim and perhaps find a resistant rootstock for the grape producing areas of this state should the need arise. Scientists are working on improved lima beans, peppers and celery adapted to the intermediate region; testing certain crops such as range grasses and walnuts; breeding disease-resistant flower crops; and exploring the potentials of new crops such as macadamia nuts and specialty crops such as the cherimoya, a deciduous subtropical fruit.

Most important, the scientists working at the South Coast Field Station are collecting a backlog of information on growing conditions and crop responses for this

Strawberry experimental plots at the South Coast Field Station. Fruit from breeding plot, left photo, is being picked for varietal yield comparisons. Use of clear polyethylene applied to beds at planting time, right photo, was found to promote growth and double yields of winter strawberries.



region. Experience has shown that agricultural problems often turn up with unexpected urgency. To solve them quickly and effectively requires a storehouse of knowledge gathered in long, painstaking, and mostly unspectacular research such as is being conducted at the South Coast Field Station.

The following list details the department of the Division of Agricultural Sciences and personnel involved in major current research projects at the South Coast Field Station:

Department of Agronomy—Davis and Riverside

- Lima Bean Improvement Project—Carl L. Tucker
- Blackeye Bean Yield Trial—Carl L. Tucker
- Wheat (Interaction of Groups of Divergent Plant Types with Their Environment)—Carl L. Tucker
- Veldtgrass—R. M. Love
- Range Plant Introduction—B. Crampton

Department of Botany—Los Angeles

- Physiological Genetics in Higher Plants—B. O. Phinney

Department of Entomology—Riverside

- Biology and Control of the Insects and Other Pests of the Avocado—W. H. Ewart and J. C. Ortega
- Biology and Control of Several Species of Aphids on Citrus—W. H. Ewart and J. C. Ortega*

Department of Biological Control—Riverside

- Biological Control of Alfalfa Pests—R. van den Bosch, L. Dawson and C. Lagace

Department of Floriculture—Los Angeles

- Turfgrass Studies—V. B. Youngner
- Inheritance in *Tagetes erecta* (Marigold)—J. W. Towner
- Breeding of Column Stocks—B. L. Johnson

Department of Horticultural Science—Los Angeles

- Rootstock-Scion Interactions and Compatibilities—S. H. Cameron and E. F. Frolich
- Postharvest Fruit Physiology—J. B. Biale and R. E. Young

Department of Horticultural Sciences—Riverside

- Avocado Breeding—B. O. Bergh
- Avocado Rootstock Studies—W. B. Storey
- Citrus Breeding (Genetics and Nucellar Embryony in Citrus, and Breeding To Produce New Varieties)—R. K. Soost and J. W. Cameron*
- Testing of Promising Citrus Hybrids—P. B. Lombard, F. R. Furr, R. K. Soost, and J. W. Cameron*
- Orange Rootstock Studies—W. P. Bitters
- Testing Miscellaneous Citrus Rootstocks for Resistance to Tristezia (Quick Decline)—W. P. Bitters*
- Influence of Various Rootstocks on the Growth, Yield and Quality of Fruit of Various Citrus Varieties—W. P. Bitters, J. D. Kirkpatrick, P. B. Lombard, and Dr. Lee Shannon
- Macadamia Variety and Rootstock Studies—W. B. Storey
- Citrus Variety Improvement Program—Dr. Walter Reuther*
- Pepper Breeding—B. O. Bergh
- Peach Breeding for Strains Adapted to Subtropical Conditions—J. W. Lesley

Department of Plant Nematology—Riverside

- Transmission of Virus Diseases in Citrus by Nematodes—S. D. Van Gundy, Plant Nematology and L. G. Weathers, Plant Pathology*

Department of Plant Pathology—Riverside

- Avocado Disease Research—G. A. Zentmyer
- Lemon Virus Disease Research—E. C. Calavan and L. G. Weathers

Department of Pomology—Davis

- Strawberry Breeding—V. Voth and R. S. Bringhurst
- Cultural Problems of Strawberries—V. Voth and R. S. Bringhurst in cooperation with E. F. Wallihan and L. H. Stolzy of Riverside
- Cultural Problems of the Walnut—E. F. Serr
- Peach Breeding—C. O. Hesse*

Department of Soils and Plant Nutrition—Riverside

- Avocado Irrigation and Fertility Plots—S. J. Richards, F. T. Bingham, T. W. Embleton and E. F. Frolich
- Lemon Irrigation and Soil Management Plots—S. J. Richards

U. S. Department of Agriculture (Entomology Research Division)—Riverside

- Testing Insecticides Against Pod Borer and Other Insects Attacking Lima Beans—M. W. Stone
- Investigations on the Use of Natural Means and Enemies for Control of Vegetable Insects—A. F. Howland

Department of Vegetable Crops—Riverside

- Pepper Yield, Nutrient Composition, Pungency and Color as Influenced by Differential Fertilization—K. B. Tyler and L. F. Lippert
- Pepper Breeding—L. F. Lippert
- Asparagus Variety and Physiological Studies—F. H. Takatori
- Effect of Fertilization of Celery and Cabbage on Yield, Nutrient Composition and Plant Quality—K. B. Tyler, O. A. Lorenz, and F. H. Takatori
- Studies With Asphalt Mulch on the Emergence and Yield of Vegetable Crops in Southern California—F. H. Takatori and L. F. Lippert

Department of Viticulture—Davis

- Cytogenetics of the Grapevine Breeding for Resistance to Pierce's Virus Disease—H. P. Olmo

* Material being propagated, field planting to be made in 1963–1964.

Column stock breeding variety plots being inspected for mosaic resistance, at the South Coast Field Station.

Trifoliate orange trees, photo above, in experimental plots at South Coast Field Station. Experimental avocado grove, photo below, being used for irrigation and fertilization trials.