

COMMERCIAL VEGETABLE INDUSTRY

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The commercial vegetable industry of Arizona is one of the most important phases of agriculture in the state. The value of such vegetables produced in Arizona is approximately \$75 million annually. The vegetables are grown in specialized areas of the state with a total acreage of approximately 100,000 acres annually.

The cantaloup industry in Arizona was one of the early horticultural developments involving growing and shipping to eastern markets by means of refrigerated cars. The horticulturists in the Arizona Agricultural Experiment Station conducted variety tests of melons before the turn of the century. The success of the commercial cantaloup industry stimulated interest in other vegetable commodities that could be shipped to eastern markets.

Encourage New Lettuce Industry

The horticulturists of the experiment station conducted lettuce variety tests in the Salt River Valley before the beginning of the industry, which interested the cantaloup growers to the extent that test car-lot shipments of head lettuce were made to eastern markets from the Glendale area. The success of these shipments stimulated a rapidly expanding lettuce industry in Arizona.

As early as 1922, the Horticulture Department determined the value and importance of commercial fertilizers in lettuce culture in a series of fertilizer tests. These tests showed that application of available phosphates had a remarkable effect upon lettuce plants from the standpoint of producing more rapid growth, hastening maturity, increasing yields, and improving quality of the marketable product.

Importance of proper irrigation of lettuce was emphasized in co-operative irrigation trials conducted by the Department of Horticulture with other depart-

ments. It was found that the highest yield of good quality lettuce was produced with uniformly high soil moisture throughout the season for winter and spring lettuce crops.

Fertilizer Placement, Quantity

The cooperating departments also developed information for improving lettuce bed shape for better plant growth in relation to salt movement and irrigation control. Specialized equipment was developed by the Horticulture Department for conducting nitrogen and phosphate fertilizer placement tests and controlled rates of application of fertilizer for more efficient lettuce production.

Improved Arizona strains of Imperial types of head lettuce were developed for localized conditions. The first certified lettuce seed program in the nation was accomplished by the Horticulture Department in cooperation with the Arizona Crop Improvement Association. The latest development in improved varieties of lettuce is the Arizona Sunbright which has resistance to tipburn.

Helped Willcox Get Started

The new lettuce area in Willcox was aided by the Horticulture Department with variety tests in cooperation with growers in the area and the Agricultural Extension Service. The importance of vegetable research and technological applications is demonstrated by the 150 per cent increase in average yield of Arizona lettuce during the last 35 years. Arizona's lettuce industry amounts to \$40 million annually in recent years, and this crop is

now grown year round in the state. Currently, emphasis is placed on research objectives concerning improving quality of lettuce and consumer acceptability through breeding, better culture and better understanding of post-harvest conditions.

In cooperation with the U.S. Department of Agriculture, cantaloup variety improvement has been effected. The currently popular powdery mildew resistant strain 45 was developed by the federal plant breeders. The Arizona 13 strain of cantaloup and more recently the Arizona Sunrise were developed by University of Arizona horticultural plant breeders for Arizona conditions.

Crown Blight Studies

During recent years, there has been an intensive inter-departmental research program in the University of Arizona in cooperation with the U.S. Department of Agriculture concerning cantaloup crown-blight investigations. Objectives include an understanding of the virus complex and development of disease resistant strains.

Arizona's potato industry has benefited by the applications of research. Yields have increased 400 per cent since the early years, due to improved cultural practices coupled with selection of appropriate irrigated areas. The increased yields during the last twenty years are due to improved certified seed, seed treatment, soil adaptation, fertilizer usage, and improved irrigation practices. Improved cultural practices, including weed control, have led to more efficient production of broccoli, cabbage, carrots, cauliflower, celery, onions, sweet potatoes, sweet corn, and tomatoes.

IMPROVED VARIETIES, better management practices, improved packaging, handling, disease and insect and weed control, have been developed by the Arizona Agricultural Experiment Station to give national prominence to lettuce, Arizona's leading vegetable crop.

