

Vegetable Crop Specialists

VEGETARIAN

No. 5

July 20, 1950

VEGETABLE OUTLOOK

Had any growers report that there was a squeeze play in the vegetable game during the 1949-50 season? The present international situation is, of course, the bunt rolling down the base line.

Anyway, the preliminary report of the vegetable sub-committee on Agricultural Production Adjustments says that "While returns for most crops averaged above production cost, many individual growers failed to realize production cost on their crops." The report goes on to say that "even should growers plant the acreage suggested, it is probable that the margin between prices and cost of production will be quite small and that inefficient operators will fail to secure returns adequate to meet cost of production."

For 1950-51 an increase in acreage was suggested for cantaloupes, cauliflower, lettuce, and strawberries. Decreased plantings were suggested for snap beans, cabbage, celery, cucumbers, eggplant, escarole, peppers, Irish potatoes, fall squash, and watermelons. The sub-committee recommended that lima bean, sweet corn, green pea, winter and spring squash and tomato acreages remain about the same as the '49 and '50 season.

AWAY FROM IT ALL--to the same end from another angle.

Growers have been on the receiving end of storms, rain and drought, and hedge-hopping late frosts during the past season. Need we say more?

Granted there's no use to fight the elements, let's pick up a little information for them along the lines of a few other factors that go in to make up the results of any given season...

DISTRIBUTION PROCESSES---seems there's room for improvement.

Believe it or not, estimates have been made that from 30% to 40% of all fresh produce that leaves the farm is never consumed as food. Human food, that is.

As you well know, there can be many sources of loss, but studies of the retailer alone indicate that an average of 7% of all his fresh produce purchases end up as losses. A breakdown of this shows generally that small stores lose the greatest amount, with a range of up to 15% of fruit and vegetable purchases, and large stores lose the least, with as little as 3% of produce purchases lost.

Further, distribution through retail outlets of fresh produce is not very well proportioned, with 30% of the nation's stores selling 75% of its fruit and vegetables.

MR. & MRS. CONSUMER---how they shop.

Surveys from all over the country bring out clearly that the average customer (and here's an eye-opener) shops

FIRST, for QUALITY.

Second, for convenience.

Third, for price.

Seems to ring a bell on the grower's end of the line, too.

GRADE VS. QUALITY--where's the line?

Ever get cornered to make a definite distinction between 'grade' and 'quality'? We made a nice try, too, but--

The experts say grade generally is considered to be made up of factors the eye can determine, such as size, cleanliness, shape, color, and defects. Quality then is much larger than grade, covering the factors of grade as well as factors that

cannot be seen--juiciness, freedom from toughness, flavor, proper maturity, and food value.

Grade can change but very little throughout the distribution period, while quality can change from good to garbage just overnight.

CARE AND HANDLING--from harvest to consumer.

Produce is all living food. It is either trying to reach maturity or is going the other way. Produce items once dead are no longer fit for human consumption, unless some method of preserving the food value has been used.

Losses generally result from (1) dehydration, (2) advances from the ideal stage of maturity, (3) decay, and (4) rough handling.

The first three of these sources of loss can be controlled to a great extent by the use of artificial conditions--meaning humidity and temperature control.

Humidity controlled at around 90% will prevent much, if any, damage from dehydration.

Refrigeration is absolutely necessary for most items, but the refrigeration requirement should be observed closely because many fruits and vegetables will be injured by low temperatures. As a general rule, crops that can be grown in the field without damage from frost keep best at 32° F., while crops that will be injured by frost in the field should not be exposed to temperatures below 42° F. There are a few exceptions to this rule--sweet corn will be injured by frost in the field, but should be kept at 32° F. to prevent sugar loss. There are a few items that will not even stand temperatures below 52° F. For example, bananas, tomatoes, and sweet potatoes.

The last cause for loss, rough handling, covers skin breaks, bruises, mashing and cracking. All of these not only damage the merchandise directly but give entrance for decay organisms.

Since produce is living food and subject to deterioration in quality from many causes, a minimum of time between harvest and consumption is of prime importance.

VEGETABLE MERCHANDISING---Retail training is now available.

Stanley E. Rosenberger, Assistant Vegetable Crops Specialist, Florida Agricultural Extension Service, is working with Florida retailers to improve the care and handling of fresh produce at the retail level. Points covered in this program include produce buying, displaying, pricing, and consumer buying habits.

Sufficient work has been done to indicate that when freshness and high quality are maintained in a well-kept and attractive produce department, consumers buy and eat more fruit and vegetables than they otherwise would.

If you have a group of retailers expressing an interest in improving their produce operations, get them in touch with Mr. Rosenberger.

MARKETING FLORIDA'S EARLY IRISH POTATOES

We've conceded above that there are many sources of loss in handling produce, but let's take a look at the status of one or two particular studies in the state.

Dr. R. E. L. Greene, Economist with the Agricultural Experiment Station, conducted a cooperative test with the USDA, growers, shippers, and railroads to get a more complete knowledge of existing practices in handling potatoes and a better understanding of where damage occurs--a study which will aid in developing better methods for preventing losses in this particular crop.

The report indicates that cuts and bruises were by far the major defect in potatoes from the Hastings and Dade County areas. Further, the amount of defects in this crop more than doubled between the shipping point and the retail store. Half or more of the potatoes in the northern retail store contained some type of defect, the most important of which were cuts and bruises--again.

Among the conclusions and recommendations were 'eliminate defects or losses due to insects and diseases'--'proper maturity for digging'--'reduce periods of exposure in field between picking up and hauling to packingshed'--'potatoes should be as cool as possible when loading for shipment'--'reduce mechanical damage through careful digging, use of properly designed and padded equipment, running equipment at proper

speeds and by avoiding long drops'---'washing, grading and drying equipment should not be overloaded.'

TOMATO SHIPPING TESTS

Going over into the tomato industry, R. K. Showalter and L. H. Halsey of the Agricultural Experiment Station are conducting cooperative tests with the USDA and shippers to compare several types of shipping containers for rail and truck movement.

Tests to date show considerable variation in the extent of injured fruit in each type of container. The researchers say "so much depends on fullness of package and handling practices, such as care in loading and unloading and promptness in unloading and shifting in the load, that it is somewhat difficult to draw conclusions from a limited number of tests."

In general, mechanical injury and decay during transit and ripening was extensive enough to indicate the need for more careful handling practices.

These losses can no doubt be reduced by proper filling, careful loading, proper cooling, prompt unloading and the use of smooth or lined containers. It appears that a lidded, lined container will deliver more pounds of tomatoes free from mechanical injury than the lug box or open type boxes such as the field box.

The workers report that "even this is no indication that the fruit which so arrives will get to Mr. Consumer's table. In a sample year's test (fruit picked mature green) under ripening room conditions decay accounted for around 10% loss, shrinkage 2-3% loss, and 10% of the fruit failed to ripen."

PREPACKAGING---another phase.

Again cooperation between the Florida Agricultural Experiment Station, industry and the USDA is yielding valuable results toward delivering quality produce to the consumer.

R. K. Showalter, L. H. Halsey, and Dale B. Thompson of the Station illustrate the importance of temperature in prepackaged products by the following examples:

"Packaged broccoli remained a good green color for 7-13 days when held at 40° F. or below, but turned yellow in 2-3 days at 70° F. Sweet corn lost sugar content at the rates of 3.5% at 32°, 20.8% at 50°, and 59.4% at 86° during the first 24 hours after picking.

"Loads of prepackaged sweet corn delivered in New York at temperatures in the 40's were graded as good to very good in quality but those delivered at temperatures above 50° were inferior to that held at 40° or lower."

And, there are other angles--chlorine used in the hydrocooler water did not completely sterilize the vegetable surfaces but held the microorganism count to a reasonable minimum. It was found that packages should be perforated for air exchange to prevent souring, off-flavors, and odors that soon develop at high temperatures.

Bringing in tomatoes again---even with care, some products can be packaged more successfully near the terminal than at the shipping end. Tomatoes not ripened to a marketable stage before they are prepackaged may ripen unevenly and make an unattractive package. Also they may develop considerable decay in the 2 or 3 days required to put them into retail channels.

POTATO WAXING

If you'll refer back to Vegetarian No. 2, page 4, and check up on the conditions of the experiment---here's a follow-up on the potato waxing deal.

Dr. Chesley B. Hall, Agricultural Experiment Station, tells us that "Under the conditions of this test there were no apparent advantages in applying wax to potatoes except to give the tubers a better appearance."

"There were no significant differences in weight loss between the 1:5 dilution waxed potatoes and those that were held in the unwaxed condition. The dilution mentioned seemed to be comparable to commercial waxes now in general use.

"There was, however, a difference in appearance as the colored emulsions gave the tubers a more uniform color."

Seems likely that consumer preference will be a determining factor.