

THE MICHIGAN POTATO INDUSTRY - WHAT'S GOING ON?

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Introduction:

Michigan's potato industry has passed through a very dramatic transition which has progressed from a few acres on many farms to a highly specialized business on fewer and larger farms. Along with this transition has been a major reduction in acreage. Michigan's total potato acreage reached a high of over 350,000 acres in the early 1920's. Since then, due to inadequate yields, increased mechanization and technology, and the trend to more specialized farming, the total potato acreage has declined to approximately 45,000 acres, a level which has been maintained since the early 1960's. Thus, Michigan which was once a leading exporter of potatoes has become a deficit state, partially dependent upon other areas for supplies. Michigan does possess, however, the production capacity, the nearby markets, and the transportation facilities to allow its potato industry to remain competitive in certain markets.

The Michigan potato industry is a dynamic one and certain significant changes in technology and production practices have taken place which are worthy of further consideration.

Variety and Market Transition

Michigan was traditionally categorized as a "round white" fresh market state and the fresh market still is important. Processing and seed, however, have increased significantly since the early 1960's. The seed acreage has more than doubled since 1963 with approximately 4500 acres now being entered for certification inspection. In 1965 the first major frozen processing plant was built in Michigan and currently contracts about 7000 acres almost entirely of the Russet Burbank variety. Within the immediate area there are several chip processing plants and in recent years many growers have modified their production program to accommodate this market. It is estimated that approximately one-third of the Michigan crop now goes to processing.

Prior to 1965 the major variety was Sebago followed very closely by Onaway, an early fresh market variety - the Russet Burbank accounted for less than 5% of the total acreage. Since 1965 a rather rapid transition has taken place and the Russet Burbank is now the most popular variety with slightly over 30% of the total acreage.

The Onaway is still the second most popular variety followed by Sebago and Katahdin. A further transition is now taking place with a trend toward varieties more adaptable for potato chip processing.

Cultural Practices

Irrigation has become increasingly important to profitable potato production. Although Michigan's total precipitation averages about 30 inches per year, timeliness of adequate moisture supply is essential. Although accurate figures are not readily available, it is estimated that approximately 50-60% of the total acreage employs some means of supplemental irrigation. Overhead sprinkler systems are used and the use of central pivot, side roll or solid set systems to minimize labor costs is increasing.

Most of the acreage is treated with a herbicide either pre-plant or pre-emergence. Systemic insecticides are applied in the fertilizer band at planting time on most of the acreage. Although the majority of the acreage is sprayed with ground equipment utilizing either the air blast or the boom nozzle sprayer, during recent years the use of aerial application has become quite common. Both helicopter and fixed winged aircraft are used and to date results have been satisfactory.

Considerable research work has been done by our Department of Plant Pathology on low volume applications and most aerial applications use from 3 to 10 gallons per acre. The low volume concept is also being applied to the ground applications and gallonages of 25 and 50 gallons are frequently being used instead of the previously recommended high gallonages of 80-150 gallons per acre. This reduction in the water requirement has done much to reduce the spraying time and cost.

Harvesting

Considerable modification in harvesting procedures and equipment have taken place in recent years and most of this initiative has come from the growers themselves. The practical and field application of the air separation principle originated in the Montcalm County area about five years ago and now this is a standard harvesting method in Michigan and even other areas where stones are a problem.

Multirow harvesting has also become more popular in recent years and windrowers are quite common. During the last two years we have seen the introduction of a new pickup-type harvester which is designed with the air separation attachment and a minimum of drops.

This harvest operation employs the use of windrowers to dig the potatoes and put four rows together on the ground. The pick-up harvester then elevates the potatoes into the truck.

One of the major reasons for these innovations in harvest operations has been to reduce the incidence of bruising. Starting with the 1967 crop, Michigan growers who have grown potatoes under contract with the Ore-Ida Company have received an incentive payment for potatoes with a low incidence of bruising as determined by their sampling procedure. This has done much to create an awareness of the bruising problem and the industry has looked for improved harvesting and handling techniques to minimize bruising. As a consequence certain harvest operations have been altered to reduce bruising damage. The air separation attachment has reduced the injury from stones. Multirow harvesting has allowed harvest machines to be operating closer to full capacity and thereby reduce roll-back and jostling as the potatoes pass over the chains. The pickup-type harvester has reduced the number of drops a potato makes from field to truck. When cool soil temperatures prevail, harvest is delayed until more favorable conditions occur. The bruise factor will play an even more important role in the future quality potato production whether it be for fresh, processing, or seed.

Summary

In summary let me say that the Michigan potato industry has been one of dramatic transitions. We have seen a decline in our total potato acreage, but the production records show that the increased production per unit has increased significantly so that our total production has not declined at the same rate. Processing will continue to play a more important role in the future of the Michigan potato industry, just as it has in the other leading potato states.