PRICE AND QUALITY OF TABLESTOCK POTATOES

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INTRODUCTION

Shippers, producers and retailers have had a continuing interest in the quality of potatoes and in the increased remuneration reflected in the market when such quality is improved. There are numerous opinions expressed in the trade about the importance of various quality characteristics, the cost of improving potato quality, and the value to a producer or handler who improves quality. In order to measure the relationship between some of these "quality" characteristics, the present study was designed to compare prices for certain lots of potatoes with specific quality designations for these potatoes.

Although a number of studies of quality and price differentials have been made in years past, the scope of each study has usually been severely limited. Most studies have involved data for one season or even one month; many have involved only one market or one shipping area; a number have studied only one quality characteristic. None of the published studies, as far as is known, have held other quality characteristics constant while analyzing the effect of one characteristic on price. Of the quality factors considered in this report, the price aspect of five have been considered to some extent in the literature.

For Idaho growers, medium-sized tubers sold for more than did small ones, and large tubers sold for more than did medium ones (13). This relationship was confirmed in Kansas City, where Idaho tubers of medium and large size sold at substantial premiums over small tubers (7). Consumers in New York City paid premiums for medium and large potatoes in comparison with small tubers (4, 8).

Idaho Russets were usually priced over other varieties. In the Chicago market they were usually at a premium over Wisconsin round whites, and often over Colorado Red McClures (16). In Kansas City, Idahos were priced above Triumphs, which in turn were priced over Cobblers (17). In both the Boston and the New York City markets, potatoes of the Katahdin-Chippewa type were priced higher than Green Mountains (3).

Florida potatoes in 100-lb bags sold in Chicago and New York City for $4.09 while 50-lb bags sold at the 100-lb equivalent of $4.60 (19). In the Southeast, 10-lb bags sold at a premium of 50-60¢ per hundred-weight equivalent over 100-lb bags of potatoes (2) and 15-lb bags sold at a premium per cwt over 100-lb bags of potatoes in Ohio (10).

Waugh, et al (21) found that as the percentage of bruised, scabby or misshapen potatoes increase in a lot, price decreased. Although the

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1This study reports some of the results of NCM-15 (a North Central Regional Potato Marketing Research Project) which was activated between 1955 and 1959. Accepted for publication July 6, 1965.

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3"Quality" is defined as obvious descriptive differences in potatoes which the buyer may note. It is believed that the results have wide application to the table stock potato industry.
evidence was not conclusive, some studies have shown that higher prices were associated with lots in which improved cleanness and brightness prevailed (4, 8, 15). Maine potatoes exhibited a 20¢-per-cwt premium for washed as compared with unwashed lots (18).

**Materials and Methods**

*Data description:* Two major sources of data were utilized. Information was compiled from U. S. Daily Market Reports of four large distribution terminals in the North Central Region: Chicago, St. Louis, Cincinnati, and Kansas City. Data for six marketing seasons were tabulated beginning with 1949-50 and including 1954-55.4

Data were also obtained from potato shipping point dealers in Western Nebraska and in the Red River Valley. For Nebraska, data for five seasons were obtained beginning with the 1950-51 season and concluding with the 1955-56 season. For the Red River Valley, data from four crop seasons were obtained, beginning with 1954-55 and ending with 1957-58.

The total quotations analyzed were as follows: lots shipped by North Dakota Dealers - 3,805; lots shipped by Nebraska dealers - 10,183; price quotations from the four central markets, each representing one or more lots of potatoes - 26,995.

Information from the official inspection certificates for each lot of potatoes shipped by dealers was obtained along with specific price data. The price quoted was net price received F.O.B. the dealer’s shipping point. Prices were for car lot or truck lot loads of potatoes, with all prices being converted to hundred weight equivalent. Prices obtained in the central markets were those paid by the carlot receiver.

*Data “Pairing”:* Data in which each characteristic was considered while holding all the other characteristics constant, included: grade, size of package, type of washing and waxing, variety, area of origin or destination of shipment, type of package, and potato size. Quality characteristics which were not included in the pairing breakdowns but were analyzed without regard to the other six qualities listed above were: maturity, cleanness, and shape. In some cases, monthly averages of the price quotations gave very satisfactory results. In other cases, it was necessary to group together periods of successive months where prices were relatively stable in order to include an adequate number of price quotations.

A sub-committee of NCM-15, which included both horticulturists and agricultural economists, met and made decisions as to the grouping of quality data which was of such great variety, that it was difficult to analyze. The decisions that were made will be indicated when specific quality characteristics are discussed later.

*Test of significance:* Two tests of significance were used. The t test for the mean was used with all the paired data. The t level considered significant was .995. In some cases where total data was used, rather than paired data, an analysis of variance technique was used. The F level considered significant was the 5% level. Unless otherwise indicated in the tables, all the data which are reported here had price differences that were significant at or above these levels.

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4The author has no reason to believe that conditions in the table stock markets have materially changed since the data in this report were tabulated and analyzed.