

The data generating technique employed in the study was designed to reckon fully with the principal sources of variation with which the sales of tomatoes might be associated.³

Within some limits, the selection of locale for conducting studies of this type is a matter of judgment. It was desirable to select a market area typifying the major industrial areas of the northeast and midwest since these are the sections of the country where the largest share of the Florida mature green tomato crop is consumed. The market area of Dayton, Ohio, was selected as meeting the requisites of representativeness. This area is comprised of a population which reflects rather fully differences among groups with respect to race, religion, and ethnic background. The test stores were dispersed throughout the Dayton market area in such a fashion as to obtain reactions from the widest possible range of customers. The location of the test stores within the Dayton market area is shown in Fig. 2.

The retail stores used would be considered large by most standards. The average weekly store traffic in all of the stores amounted to 91,414 customers. Although some customers shop more frequently than once a week, it is apparent that the study results reflect the reaction of many thousands of individual families.

TOTAL SALES OF TOMATOES

During the course of the study 22,440 pounds of tomatoes were purchased by customers in the 11 test stores (Table 3). The sales rate on a weekly basis amounted to about 9,000 pounds, or approximately 800 pounds per store. Slightly more than half of the quantity sold from the test displays consisted of the size 6 x 7 U. S. No. 1 tomatoes used as the constant component. The remainder of the total purchases were distributed among the

³ The statistical model employed was:

$$Y_{ijk} = M + T_i + S_j + P_k + e_{ijk}$$

where:

Y_{ijk} = pounds of tomatoes purchased per 100 customers
of treatment i in store j , period k

M = general constant

T_i = effect of treatment i ($i = 1, \dots, 11$)

S_j = effect of store j ($j = 1, \dots, 11$)

P_k = effect of period k ($k = 1, \dots, 5$)

e_{ijk} = random disturbance