Growers Face Changing Market

changes in food distribution system affect the relationships between producers and the processing and marketing agencies

Norman R. Collins and John A. Jamison

The following article is based on Giannini Foundation Paper No. 165, Mass Merchandising and the Agricultural Producer, *by the same authors.*

The food retailer in the past decade has assumed the position of prime mover in initiating a mass-distribution orientation of the entire food industry. Retailer procurement and merchandising policies now effective are having a substantial impact upon agricultural producers and their marketing agencies.

Buying practices of the retail segment are now characterized by a trend toward direct purchase and a closer coordination with suppliers.

Today's large retailers do not simply accept supplies available in terminal consignment markets. Such supplies do not offer large and stable quantities of a product of uniform and acceptable quality required for mass merchandising. Relatively small buyers—for whom terminal consignment markets were developed—are able to fill their requirements of quantity and quality by careful selection among the lots presented. The large retailer can not afford to depend upon this type of market to fill his demands.

To maintain better coordination between the retail level and the producer level, retailers in general and large chains in particular now own and operate a wide variety of processing and handling activities. The operation of such activities gives the retailer control of that particular function, moves him closer to the producer and facilitates effective influence over production activities.

There is an altered relationship between buyer and seller. The buyer makes an active effort to influence product specifications offered so that they are compatible with mass, self-service merchandising techniques.

The profit position of mass food distributors has become increasingly sensitive to variations in certain product characteristics such as desirable size, good condition which can be maintained during expected shelf life, and pleasing appearance. Attractive display is a basic tool of mass merchandising and product adaptability to display is a preferred characteristic.

Handling ease is often an issue between retailers and suppliers. Size and weight of master containers, standardized box size, and package shapes—to fit store facilities—are just a few of the areas having cost implications for the retailer.

High retail sales levels are maintained by offering continuously available supplies of products whose characteristics have earned substantial consumer acceptance. Volume movement requires uniformity of product and stability of supplies to avoid out-of-stock situations disruptive of the continuity of consumer purchase patterns.

Integration

The most significant impact—on the farm producer—of the changing demand structure of agricultural products has been the increased dependence of the producer's profit position upon actions taken by other producers and marketing agencies. Many of the product specifications desired by retail organizations can be provided only as the result of a rather narrowly defined combination of actions by both producer and marketing firms. Other specifications may be largely satisfied by the producer but only if the purchase requirements are transmitted to the farm level with sufficient precision. Satisfactory coordination of such functions physically performed by separate ownership units may best be obtained through an increase in the extent and degree of integration of these functions under some form of joint decision-making body.

These changing marketing conditions have intensified the necessity for the reallocation of certain decision-making responsibilities between growers and first handlers.

Contractual arrangements exist between many vegetable crop producers and processors. Local commission merchants haxe expanded their operations to include financing and performance of production activities. Some fresh-market shippers contract early in the season with a number of growers for their output. Bargaining cooperatives coordinate matters of consequence to fruit and vegetable producers and processors.

The changed methods of food distribution have given strong impetus to such integration to achieve adequate fulfillment of retailer-desired specifications. One group of product attributes—size, variety, appearance, and other quality-determining characteristics—can be attained principally through appropriate production practices at the farm level.

To obtain the desired supply response at the producer level, an integrated relationship has often been promoted in which the marketing agency is granted some decision-making power over specific production practices such as fertilization, irrigation, insect control measures, planting dates, maturity standards, and harvesting techniques.

Some product specifications that are important to profitable retailer operations can not be achieved effectively by independent actions—of either an individual farm producer or a marketing agency—and producer and first handler must combine their actions in particular proportions to attain optimum adjustment. The same situation has increased the necessity for integrating farm production activities with the operations of marketing firms at the first-handler level.

Among the attributes requiring coordination between the marketing firm and the first-handler levels are uniformity of product, stability of supply, and availability of large volumes. Without producer coordination, the grading, sorting, packing and processing activities alone can not satisfy the uniformity requirements. The sensitivity of the in-

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SAMPLER

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placed 4½″ below the top of the deceleration chamber to minimize air drag at the top. The entrance pipe extends into the center line of the cylinder to serve as its own deflector. A flexible tube is used to connect the inlet tube to the sampling tube.

The sampling tube is a 3″-diameter thin-wall tubing 66″ long. The probe end is cut in an elliptical shape to permit maximum air flow through the tube when it nears the bottom of the bin. The top end of the tube is fitted with a finger-tip-operated sleeve valve which is opened when the tube reaches the bottom of the bin. The opened sleeve valve provides an additional flow of air to carry the nuts above the valve through the flexible tube into the deceleration chamber. The velocity of air in the tube diminishes rapidly when the valve is opened, and the nuts in the tube below the valve simply fall to the bottom of the bin. Yoke-type handles are attached to the tube below the valve to facilitate handling the tube.

In operation, the sampling tube is placed in vertical position over a predetermined point on the bin of almonds and the air pump is started. The operator lowers the tube into the almonds, at a rate equal to that which the almonds are carried from the bottom end of the tube. The rate of feed of the tube into the almonds requires a feel by the operator, since too slow a feed results in too large a sample and too fast a feed wedges the nuts, requiring that the tube be lifted to dislodge them.

The amount of air necessary for accelerating and carrying each variety of almond is practically identical. Air channels through the nuts are adequate to provide a sufficient flow of air into the tube at any depth in the bin. Increasing the operating vacuum above 14.5″ of water results in an increase in time required to penetrate to the bottom of a bin 54″ deep. Additional tests will be necessary to determine the significance of this factor.

In the trials with the four varieties of almonds the samples were taken from a bin 16″ × 16″ × 54″. A cylindrical transparent window in the container permitted the observation of the reaction of the nuts during the sampling operation.

Two scoop samples were used as controls and to determine the variation between the two scoop samples. A sample was then taken with the pneumatic sampling; the nuts replenished and another sample taken. The samples were run through the standard sampling procedure at the Sacramento receiving station.

In these preliminary trials there was less variation between the two samples taken with the pneumatic device than between those taken with the scoop. However, because the shelling percent is the primary factor in price determination, further investigations and evaluations are necessary.

Operating Pressure, Time, and Weight of Sample for Pneumatic Sampling Device for Sampling Three Varieties of Almonds

Variety	Inches H_2O	Operating inches H_2O	Operating pressure drop inches H_2O	Time Sec.	Wt. sample
Mission	17.2	8.5	9.0	13.0	5.92
Mission	14.5	7.0	7.5	11.0	5.89
Mission	12.0	5.9	6.1	12.5	5.39
Mission	10.0	5.3	4.7	15.0	5.23
Mission	8.0	4.2	3.8	16.0	2.70*
Peerless	17.0	9.3	7.7	13.3	5.52
Peerless	14.5	8.2	6.3	12.2	5.45
Peerless	12.0	6.7	5.3	13.7	5.27
Peerless	10.0	5.7	4.3	14.3	4.92
Peerless	8.0	3.8	4.2	19.2	2.3*
Jordanola	17.5	8.7	8.8	15.0	6.06
Jordanola	14.5	7.9	6.6	14.4	4.72
Jordanola	12.0	7.0	5.0	15.0	4.61
Jordanola	10.0	6.4	3.6	17.2	4.52
Jordanola	8.0	4.8	3.2	18.0	3.58
Jordanola	6.0	3.8	2.2	20.0	2.68*

* Plugged.

Comparison of Data
Samples of different almond varieties taken by conventional scoop and experimental auger and probe in receiving station in Sacramento

Variety	How sampled	Good shell %	Poor shell %	Chaff %	Loose meats %	Shelling %
Nonpareil	Scoop	99.0	0.0	1.0	0.0	63.0
	Auger	62.0	7.0	12.0	19.0	61.0
	Probe	72.0	5.0	3.0	20.0	63.5
Mission	Scoop	99.0	0.0	0.5	0.5	44.5
	Auger	74.0	16.0	6.0	4.0	43.0
	Probe	85.0	9.0	3.0	3.0	45.0
Neplus	Scoop	96.0	2.5	0.5	1.0	60.0
	Auger	51.5	14.0	15.5	19.0	58.5
	Probe	59.5	10.0	11.5	19.0	59.5
Peerless	Scoop	93.0	7.0	0.0	0.0	41.0
	Auger	74.0	17.0	7.0	2.0	39.0
	Probe	77.0	16.0	6.5	0.5	40.5
IXL	Scoop	72.5	26.5	0.5	0.5	59.0
	Auger	23.0	26.5	26.0	25.0	58.0
	Probe	45.5	18.5	21.0	16.0	60.5
Jordanola	Scoop	94.0	2.0	2.0	2.0	62.0
	Auger	12.0	5.0	2.4	14.0	61.5
	Probe	42.0	3.0	1.6	12.0	63.0

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MARKETS

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come positions of both producer and first-handler firms to the actions of the other encourages increased integration.

Cooperative Associations

In producer marketing cooperatives in the western region, the growers actually own and operate assembly, processing, and selling facilities, but the methods and techniques employed by most cooperative organizations do not seem to facilitate optimum coordination. Characteristically, the association member has remained largely autonomous in making production decisions. The task of the cooperative organization consists primarily of preparing the product in the most advantageous manner through grading, sorting, or processing, and then selling it for the highest possible return.

A constraint is placed upon cooperative management in that it must take as given the products delivered by its members. Under these conditions the total economic return may be less, and perhaps much less, than if lines of authority are instituted to facilitate production and marketing coordination.

Although cooperatives have been prominent in the development of better marketing procedures and facilities, the problems facing them today require more than adjustment of packing, processing, and selling methods. Providing product features desired by the retail segment necessarily involves increased handling costs and increased tonnage of low-value, unsalable, or culled-out products unless correlative adjustments are made in production practices.

Within the cooperative structure, payment procedures granting premium differentials for desirable product characteristics are a usual method of influencing production practices. Although payment systems are being improved, it is doubtful that information on demand characteristics conveyed by payment procedures can ever be adequately translated by the member in terms of the most appropriate production practices. For that reason some cooperative organizations have taken steps to exert control over production methods.

Citrus associations—for example—have taken over some of the spraying and harvesting for their members; field departments have been expanded; supply departments recommend rootstocks and insecticides. Active control of production practices through grower cooperative organizations is not widespread at the present time but future developments in cooperative marketing—undoubtedly—will include achieving such integration as one of the basic objectives.

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Calavo Growers of California..........................120 avocados
For study of mechanisms of fat and oil synthesis in avocados

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For walnut insect investigations...........150 lbs. Sevin 50% W. P.
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