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TOTAL SYSTEMS PRODUCTIVITY AND ANALYSIS

Chairperson: Paul Canavan, Stop & Shop, Inc.

PROJECT MUM: A NEW WAY TO MOVE FRESH VEGETABLES

by

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This is a proposal of the United Fresh Fruit and Vegetable Association to improve the physical distribution system of the fresh fruit and vegetable industry.

Food costs, like all other costs in the United States, have been climbing steadily. These rising packaging, handling and transporting costs which shippers, receivers, and consumers have experienced are directly related to the excessive variety and number of sizes and types of shipping containers used for shipping fresh produce. Current estimates indicate that the fresh fruit and vegetable industry utilizes more than 500 different containers for its perishable products.

This problem is not new. Over 30 years ago, a U.S. Department of Agriculture report on produce containers, discussed the need for standardization or simplification of this distribution process. This 1950 government study documented the increased distribution costs attributable to manufacturing a variety of sizes and types of containers and to handling the odd-sized containers in transport and storage.

More recent research of Dr. Gordon Bloom, noted food industry productivity expert from the Massachusetts Institute

of Technology, indicates that distribution improvements at almost all levels of the food marketing industry have either been minimal, or in some cases actually negative. These slides, representing a number of current distribution practices within the fresh fruit and vegetable industry, seem to confirm the observations of the MIT professor.

An explanation for the minimal amount of improvements over the past three decades is contained in a report on productivity in physical distribution, published by the National Council of Physical Distribution Management.

The report states that in the past, traditional companies have fragmented the responsibility for various aspects of physical distribution among many independent departments and managers. This 1978 report concludes that many companies have recently organized physical distribution into a formal management function, thereby providing an opportunity to focus management attention on this complex and costly process.

The United Fresh Fruit and Vegetable Association believes that Project MUM represents such an opportunity for improving the distribution system of the fresh fruit and vegetable industry. Project MUM is based upon the premise

that a limited number of select containers with standardized lengths and widths will meet the distribution demands of the product industry more efficiently and economically than the five hundred cartons which the industry currently uses in one way or another.

Although an individual shipper may package a particular commodity in a single-sized carton, this carton is frequently different than the one which another shipper may use for the same commodity.

Upon delivery of the produce, a receiver will frequently break down the pallets of each shipper to mix the loads to fill the orders of the various retail outlets. As evidenced by these slides, the restacked loads subject the fresh produce of each shipper, as well as its reputation for quality, to possible damage. One way for every shipper to ensure that its product reaches the consumer in good condition is to standardize its containers, thereby permitting its commodity to create a stable load with the commodities of other shippers.

For many years, United has been concerned about and interested in this issue of standardization. Consequently, on behalf of its members, and in cooperation with the U.S. Department of Agriculture, United's Unitization and Productivity Committee has undertaken Project MUM, a program to research and develop standardized shipping containers designed to interlock on standard 48 x 40 inch/120 x 100 cm pallets or slipsheets.

Let us take a brief look at the concepts embodied in Project MUM: M - U - M - Modularization, Unitization and Metrication.

First, MODULARIZATION: A concept that geometrically relates shipping container sizes to one another and in turn, to a common unit size. United believes that modularization offers a way of reducing the number of container

sizes and types in use and thereby reducing produce marketing costs. To implement this modularization concept, United has endorsed the use of 14 basic container sizes for transporting fresh produce.

The 14 modular containers are designed to utilize 100% of the 48 x 40 base, however, United feels that any combination of modular containers which will utilize at least 90% of the pallet or slipsheet base are acceptable under Project MUM. Current studies show that pallets of mixed produce loads leaving distribution warehouses for delivery to retail stores utilize only 50% of the pallet base.

This brings us to the next element of Project MUM---UNITIZATION. The unitization concept is literally based upon a standard 48 x 40 centimeter pallet or slipsheet. United's Unitization and Productivity Committee has endorsed the use of this standard-sized pallet or slipsheet within the fresh fruit and vegetable industry. Specifically, unitization is the process of stacking the modular, metric-sized containers on the standard-sized pallet or slipsheet. By design, the modularization of containers permits the unitization of loads. The result is a more stable pallet of produce.

The last element of Project MUM is METRICATION. As a result of the growing international trade in fresh fruits and vegetables, the industry is very much aware of the potential problems associated with the non-metric size and weight system in our domestic distribution system. As you may have noticed earlier, there is astonishingly little difference between the 48 x 40 inch pallet, which is currently used within the food industry, and the internationally used 120 x 100 centimeter pallet. Ralph Waldo Emerson once stated that nothing astonishes men as much as common sense. Well, if this industry is in the process of standardizing its distribution system, United believes that it makes good common sense to make the new industry standards conform to the expanding international trade markets.

Under Project MUM, with the distribution system capable of handling unitized loads, a number of U.S. produce shippers and receivers have adopted and even demanded the use of the five metric sizes along with unitization.

Unfortunately, only a small portion of the U.S. shippers and receivers have accepted the practicality of standardization or unitization, even though the potential benefits are great. Specifically, United believes that the benefits which Project MUM offers include:

Reduced Handling - Produce can be stacked on a pallet at the time it is field packed. From that point on there is almost no need for individual handling or rehandling of the cartons. Rehandling takes time and costs money. Project MUM avoids rehandling.

Reduced Damage - Produce damage occurs whenever a significant force is applied to the carton. When a carton is lifted, tossed, dropped or individually relocated, chances increase that damage occurs and that product quality decreases. Damaged produce sells for less money. Project MUM avoids damage.

Better Refrigeration - Tests show that produce on trailer floors gets hot while produce on pallets remains cool. Ten-degree differences are common. Why?... Better air circulation. Better refrigeration and higher quality go hand-in-hand. MUM maintains high quality.

Increased Productivity - Loading and unloading time, warehouse space, tracking, pilferage all cost money. Handling in unitized lots helps keep things moving and helps keep records straight. Equipment and warehouse space can be turned over faster. Less dock space is required, and costly waiting is reduced. MUM saves time and money.

Streamlined Distribution - Mixed pallets can be built up using layers of various commodities. This is particularly true when the standard-sized pallet or slip-sheet base is used. Taller loads are

possible without toppling over, allowing more produce per truckload between distribution centers and individual stores. Palletized produce arrives in better condition, makes better use of limited space and is easier for the store to handle. MUM reduces distribution costs.

Fewer Injuries - Back injuries hurt and cost money. Palletizing eliminates the need for most hand lifting and moving cartons. Reduced exposure means reduced accidents. MUM reduces employee injuries.

While many knowledgeable people believe that the benefits of Project MUM represent potential savings of billions of dollars each year, the widespread adoption of the MUM concept has yet to occur. Certain obstacles do exist.

First, the strong, traditional marketing practices within the fresh fruit and vegetable industry. Second, the capital investment required to provide the equipment and facilities to handle unitized loads. Third, potential technical problems requiring research to make unitization practical and cost-effective.

United believes that the use of standard container sizes and unitization in the U.S. will grow at the same rate at which these obstacles are overcome. The U.S. Department of Agriculture shares this belief and has joined with United to examine these obstacles. Researchers at the USDA are hand-packing produce items into the five standard metric sizes to access the differences in count and weight between them and the conventional containers currently marketed. They are developing new ventilation hole patterns for containers which will work effectively with the USDA designed refrigerated trailer that forces cooling air from the bottom to the top of the trailer. They are exploring inexpensive unitizing methods, experimenting with new handling methods, and closely examining the effects of unitization on produce quality. Ultimately, the research sections at USDA take these projects out of the laboratory or the field and evaluate them either alone or in combination with one or more

of the other projects under commercial conditions. Most often this takes the form of a test shipment sent to either a domestic or an export destination. For example, a test load of papayas was packed in a standard 50 x 30 cm carton and shipped from Hilo, HA to Los Angeles, CA, arriving in excellent condition.

Last season, avacadoes were involved in an international test shipment. The produce was packed in both single and double layer containers measuring 50 x 30 centimeters and stacked on standard-sized pallets. Originating in Oxnard, CA, the avacadoes were shipped to Paris, France. Upon arrival, an inspection revealed that the produce was in near perfect condition with no load shift.

Another test shipment involved Florida potatoes. Comparing the traditional bag packaging with standardized containers, the potatoes were loaded on a truck in Homestead, FL and delivered to Jewel Food Stores in Melrose Park, IL. The Jewel inspectors found less skinning on the potatoes in the MUM-endorsed cartons when compared with the potatoes packed in the bags.

While these test shipments represent isolated movements of fresh fruits and vegetables, many companies and their customers have recognized the advantages of Project MUM and have steadily increased the amount of commodities moving in standardized cartons on standardized pallets and slipsheets. Some growers and shippers have completely embraced the MUM concept and have fully incorporated it into their distribution system. One such company is currently palletizing its shipments of cauliflower and lettuce. The caulif-

flower cartons are 60 x 50 centimeters and fit four per layer on a pallet. They interlock and stack thirteen layers high with tie sheets located at the middle and top of the load for added stability.

Lettuce cartons, which are 60 x 40 cm, fit five per layer on the pallet. Each carton contains one uniform size of heads and has a total of 18, 24, 30, and 38 heads, depending on the size of the individual head.

Since the carton-by-carton handling is minimized, the wrapper leaves have been reduced from six in the old carton to two in the new carton, which makes more room for salable lettuce in an expensive cross-country haul. It also makes trimming faster and easier after it reaches the store.

Upon reaching the store, the palletized loads can dramatically improve the warehouse operations for the receiver and significantly reduce its warehouse costs. In addition, shipping in standardized cartons will permit the receiver to build stable mixed-loads and to protect the quality of every shippers' produce until it reaches the consumer.

Although Project MUM may require initial investments for some shippers, those that have already adopted the principles of the MUM concept, such as the lettuce and cauliflower growers, fully expect to recover their initial costs and to share in the savings of Project MUM, and these savings will accrue to growers, receivers, and consumers without the industry ever growing another acre, packing another container, or transporting another pound of fresh produce. If MUM is successful, United believes that the entire food industry will be better for it.