A new method of packing oranges—called rapid pack—was in operation during the 1957 season on a citrus ranch near Santa Paula.

In the first successful demonstration—designed for lemons and transverse sizers some years ago—the fruit was carried by a conveyor belt in front of the packer. From the edge of the belt the packer could pick off two handfuls of fruit at a time and place it into the carton positioned between her and the belt. One feature of the system called for the packer to be seated.

About a year ago it became apparent that a satisfactory development of such a method was needed in the orange industry using the standard orange sizer, so studies were started on a rollboard and baffle system for use with the standard sizer. Previous elaborate studies had failed to work out a satisfactory solution but after a series of experiments a successful method was achieved.

The rapid pack system in use at Santa Paula represents further refinement of equipment. One side of one sizer was rebuilt. The sizer was raised and the front of the bins replaced by a rollboard. The carton to be packed is placed directly in front of the rollboard and the packer reaches across the carton to edge of the rollboard, takes two handfuls of fruit and places it in the carton.

The long reach and body turn required by the old system is eliminated and time required to pack a carton is materially reduced. The work is much easier. An important reduction in cost has been achieved and more is anticipated.

The one specification that must be adhered to very closely is height of rollboard edge from the floor. The height at Santa Paula is 41" and seems to be about right. The far top edge of the carton should be just even or slightly below edge of the rollboard.

Standing erect in front of the carton, the packer's elbows should swing clear of it. Also it is important that the elbows not be too far above the carton or the packer will have to stoop to reach the bottom. It is very easy for the packer to reach across for two handfuls of fruit at a time and to quickly fill a carton.

The height specification is of extreme importance as ease of posture is basic to economical operation. It is believed that most packers can work comfortably with the specifications given. For others, whose elbows touch or who have to stoop, some adjustment, if possible, should be made. For short packers, a floor stand can be supplied.

The sizer should be raised enough so that fruit will roll out of the bin and over the rollboard to its edge at the given height of 41". Front of the bin is removed and replaced with a baffle so only one layer of fruit will reach the edge of the rollboard, though fruit can still pile up in the bin making an adequate reservoir available for each size lot.

In designing the baffle care must be taken so that free-rolling fruit will not roll through and over the edge when the rollboard is empty, so that fruit does not jam and so that just one layer of fruit reaches the rollboard edge. The Santa Paula design works in a nearly perfect manner. The baffle is fastened to a slotted board in such a manner as to allow the baffle to be raised or lowered and hence make it easier or more difficult for fruit to pass through. The adjustment may vary for different fruit sizes and degrees of hardness.

Edge of the rollboard needs to be designed carefully. In all demonstrations thus far the last 3 1/2" of the rollboard has been sloped much less than the rest of it; in fact the slope has been reduced to almost level. This change in slope is made in order to raise the front row of fruit a little from the fruit behind and...
marked holes. This method reduced the planting time by 50%. However, a close follow-up irrigation—by furrow or sprinkler—is necessary to settle the plants.

A good crew is important in the use of the labor transport and once a crew has been trained the men should be kept to work together.

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SLUDGES

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SLUDGES—25% sludge—peat or wood shavings base—by volume has proven satisfactory with carnations grown in the greenhouse on raised beds. After-steam toxicity was held in check by leaching with heavy application of irrigation water at planting. Additional fertilizers and amendments—single superphosphate at four pounds, one and one half pounds sulfate of potash, and 10 pounds of agricultural lime—were added per 100 square feet of planted area shortly before planting. No nitrogen fertilizer was added for a period of several months.

In other trials sludge has been used successfully on canned Meyer lemons, camellias, junipers, and daphne with 25% by volume sludge—either peat or wood shavings base—mixed with fine sand. No additional fertilizer was added.

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