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Banana packing and waxing

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IN 1955, representatives of the Carnarvon banana growers approached the North-West Branch of the Department of Agriculture with the suggestion that tests be made concerning the value of waxing bananas prior to consignment. It was claimed at the time by the Director of Horticulture of the Queensland Department that, by means of wax dipping, bananas had been transported from Northern Queensland to Brisbane, ripened artificially, and then returned to Northern Queensland for sale in the middle of summer, whereas the undipped fruit arrived completely unsaleable.

As a result of the inquiries made, some samples of wax were obtained from the oil company which is handling the product at the present time. These consist of a finely divided crystalline wax emulsion and a blended paraffin wax emulsion. One part of the former is mixed with three parts of the latter, three times the total volume of water is added, and a small quantity of the detergent, Penetrax, is mixed in to make the emulsions spread over the surface of the fruit.

INVESTIGATIONS COMMENCED

In 1956, a series of fruit quality investigations were commenced from the Gascoyne Research Station, and periodically one or more of the test cases were treated

Fig. 1.—A primitive but effective method of waxing bananas. A sheet of corrugated iron serves as a draining board and a bowl holds the waxing solution.
with wax before consignment to the Metropolitan Markets. Samples from the test cases were held over in Perth after ripening until complete breakdown had occurred, and this was carried out over a period of 18 months. From repeated tests over two seasons, it appeared that fruit which had been waxed was keeping longer in either summer or winter than any other fruit in the consignments.

Fig. 2.—Dipping a hand of bananas in the waxing solution

In the summer of 1958-59 a somewhat larger consignment of waxed fruit was sent to Perth from the Gascoyne Research Station, this time with the object of investigating the reaction of shopkeepers to such fruit. The indications from this original consignment were encouraging. Several growers who had expressed interest in the project were enlisted in the next phase of the trial, and 15 cases of fruit altogether were treated. During the sale in Perth, buyers were asked to watch the fruit over a period of time and offer criticism and comment on its appearance and keeping quality after being held in the shop for a number of days. The reaction of these buyers was such that most of them asked for more waxed fruit, and were prepared to pay up to 1d. per pound more for it. More growers have since made inquiries, and have obtained wax and are treating a percentage, if not all, of their fruit.

POINTS WORTH NOTING

The advantages in waxing are threefold. The fruit definitely keeps longer, both in summer and winter, without loss of flavour. Bruising after waxing has been carried out is minimised, and small rub marks and scratches do not seem to develop to the same extent as in the untreated fruit. The appearance of the fruit is definitely enhanced; it seems to have a more even and deeper colour, and has an attractive shine.

It now appears that those agents who repack bananas for country orders, are buying increased quantities of waxed fruit for their trade, since it carries so much better over distance. This is of considerable importance, since most of these buyers had previously purchased New South Wales fruit.

A SIMPLE PROCESS

The waxing process itself is very simple. After the wax has been mixed and bulked with water as described earlier, it is placed in a receptacle large enough to take a complete hand of bananas. As dehanding is carried out, each hand is completely immersed in the wax before being placed in the stack on the bench. Some growers have arranged simple draining boards, upon which they place each hand after immersion, so that surplus wax will run back into the receptacle. Using this method, stacking is carried out after each bunch has been completely dehanded, commencing stacking with the first dipped hand. Drying does not usually take long once the stacking has been carried out and packing can be commenced at any time after the fruit has been dipped.

There are several disadvantages to the process. The time taken for dehanding and stacking is at least doubled by the increase in handling entailed in waxing. Once dipped and stacked, hands of bananas have a strong tendency to slip about, and on occasions large quantities have fallen from the bench to the floor. This means that extra care is required in stacking, and that stacks cannot be made very high.

It is hoped that at least 20-30 per cent. of the bananas now leaving Carnarvon will be waxed in the near future, so that those buyers who now show distinct preference for it can be assured of further supplies, particularly in the case of repacking agents.
Once wax has been mixed and used it commences to slowly break down, but it has been found that it can be used again at least once, provided that the intervening time is not longer than two weeks. After this time there is a tendency for the suspension to form coagulating lumps.

The process is quite inexpensive. One gallon of wax costing approximately 14s. at Carnarvon, is sufficient to treat about 30 cases of fruit, and if a draining board is used this number of cases is increased further.

Fig. 3.—Bananas carrying bruises or blemishes like these should not be waxed

GOOD PACKING PAYS

One point should be made clear at this stage. The waxing of poor quality or badly packed fruit will gain nothing for the grower concerned. In fact, more could be gained for the district as a whole at the present time, by improving the culling, grading and packing of our fruit. It has recently become noticed that the presentation of fruit by the average Carnarvon grower leaves much to be desired. This is perhaps the main reason why so many buyers have elected to purchase bananas imported from New South Wales. This imported fruit is, as a general rule, neatly and well packed, the cases are all well papered to minimise bruising, and it is obvious that not so much “bulge” is used, the overall effect being that nearly 100 per cent. of the fruit is fit for sale.

It is easily within the means of Carnarvon growers to bring their pack to equal or even better standard. The principal points to be observed when packing are:

(1) Paper the case on sides, top and bottom to minimise bruising against the rough boards.

(2) Be sure that each individual fruit sits into a groove of the previous layer; fruit should never sit one on top of the other, as cracking and bruising will result.

(3) Do not thrust the fruit down into the sides of the case; you will not only bruise either the nose or the shoulder, (depending on whether you are putting the reverse or orthodox pack) you will also create “side bulge.” If this occurs, your poorly-packed case could easily damage someone else's fruit during the journey to Perth.

(4) Do not build layers of fruit too high above the top of the box. The maximum is 1¾ bananas high for small fruit and 1½ for large. If you are packing higher than this there is a very good chance that some will be split or badly bruised.

(5) Don’t lid down immediately after packing, because the fruit will still be hard and brittle, so that it cracks more easily.

(6) Try to keep the bananas matched in the case according to their position on the hand. A banana from the bottom of the hand, which is moderately bent, when placed alongside an almost straight fruit from the top of the hand neither looks well nor fits well.

(7) Be very careful when packing centre layers. Make sure that the bananas fit firmly and will not be bruised by the outer layers.

(8) Throw away any badly marked or bruised fruit. It could easily reduce the price of the whole case.

(9) Do not pack bananas from a ripening bunch among those from less mature bunches, since uneven ripening will spoil the appearance of the whole case.

(10) Avoid under-grading and also make sure that all the fruit in each grade is of even size.

(11) Do not let your fruit fill to bursting point, particularly in hot weather, since it will sometimes break down prematurely.

(12) Never step on your cases, and be sure that the carrier is equally as
Fig. 4. — Banana Packing: A—Papering the case; B—A neatly-packed case with a board removed from the side to show the details of the pack; C—Careless packing shown here soon lowers the standard of the district's produce; D—Evenly-sized fruit is an aid to good packing. Note height of fruit to give an adequate bulge to the lid; E—Bruises on fruit which has been rammed down the side of an unpapered case; F—A good pack nearing completion. The fruit is evenly-sized with layers fitting into the grooves of the preceding layer; G—A well-packed case showing the desirable degree of bulge on the lid.
careful, since the weight of a man on the pliable boards of a banana case will bruise a large quantity of fruit.

(13) Never leave fruit in the sun either before or after packing, or premature break down will be the result.

(14) Handle bunches carefully when cutting and "carrying out," to avoid bruising and splitting.

Any grower has the capacity to pack well once properly instructed. Care and patience are most necessary right from the outset; speed will come later. It takes 18 months to produce each bunch of bananas, so a little extra time in the packing shed to perfect the presentation of the product will do no harm. If the packing standard of our district as a whole can be lifted, better prices can be maintained.

CEREAL HARVEST PROSPECTS

After consideration of reports received from the cereal growing districts it has been decided that no alteration will be made to the preliminary harvest forecast which was issued by the West Australian office of the Commonwealth Bureau of Census and Statistics on October 26.

When the first forecast was issued the possible effect of the then recent rains was taken into consideration and the latest advice received has confirmed that forecast which was for a total production of some 48.5 million bushels of wheat from 3.65 million acres for an average yield of 13.3 bushels per acre.

The marketable harvest is estimated at approximately 44.5 million bushels. Information received from the various district offices indicates that the late October rains were very beneficial and in general the crops have matured satisfactorily and disease incidence is generally very slight.

No alterations have been made to the estimated production of oats for grain which remains at 17 million bushels from 1.25 million acres for 13.6 bushels per acre. Some 400,000 acres of barley are expected to be harvested to yield about 5.5 million bushels for an average of 13.8 bushels per acre.

Cereal hay crops (wheat and oats) are expected to yield about 260,000 tons, averaging one ton to the acre.

This latest forecast was again prepared by the West Australian office of the Commonwealth Bureau of Census and Statistics in collaboration with officers from the Department of Agriculture and with the assistance of estimates and seasonal reports from the several branches of the Rural and Industries Bank.
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