"Stop-drop" Sprays for Jonathon apples

J. Cripps
"STOP-DROP" SPRAYS FOR JONATHAN APPLES

By J. CRIPPS, Horticultural Adviser

THERE is at present no foolproof and entirely satisfactory stop-drop spray for apples. This is unfortunate as the average grower desires simplicity. To date three materials have been included in experimental work undertaken by the Department of Agriculture, namely, NAA (alpha naphththalene acetic acid), 245TA (tri ethanol amine salt of 245 tri chloro phenoxy acetic acid) and 245TP (tri ethanol amine salt of 245 tri chloro phenoxy proprionic acid).

The 245TA did not prove particularly effective in the original experiments and is not completely reliable so that it was omitted from later trials, work being concentrated on 245TP and NAA.

Our findings have been that 245TP has certain distinct advantages. Firstly, it is effective over a longer period (at least 35 days) than is NAA. Secondly its application at 10 parts per million results in a slightly greater reduction in pre-harvest drop than does the application of NAA at the same concentration, but the difference is very slight and of no commercial importance. Thirdly when applied at higher concentrations of about 25 parts per million it advances fruit maturity slightly and increases fruit colour which is an asset when fruit is to be placed on the local market early in the season.

Its most important disadvantage is that its use leads to an increase in the breakdown of fruit after removal from cold storage. Actually in our experiments this was increased from 11 per cent. to 24 per cent. 245TP should not, therefore, be applied to fruit which is to be cold stored or exported.

NAA on the other hand does not affect the storage life of fruit or lead to deterioration after leaving the cold store. Its main disadvantage is its short period of effectiveness, but this disadvantage can be overcome by applying one spray at least
a month before harvesting (which would be during the last week in January in the Hills area and possibly a week later in the South-West) followed by a further spray a fortnight later. In one of our experiments two sprays of NAA reduced pre harvest drop to 2.7 per cent. of fruit whereas one spray of 245TA resulted in a drop of 2.2 per cent. of the total crop so that two sprays of NAA are as good as one of 245TP.

Further observations are that a spreader should always be included with all stop-drop sprays even if the manufacturer states that the purchased spray already contains one. Tritan B 1956 was used in our experiments, but any detergent spreader is suitable. Thorough spraying is essential and the trees should be soaked. Thorough spraying involves spraying the tree until a pronounced runoff takes place.

Irrigation reduces fruit drop. In the non-irrigated orchard at Stoneville Research Station 30 per cent. of the fruit on unsprayed trees dropped before it could be harvested. On the other hand trees in a Hills orchard receiving frequent waterings only dropped 8 per cent. of their fruit over the same period.

Hot dry weather also increases pre harvest drop.
The actual drop of fruit commences, with the variety Jonathan, 30 to 35 days before the fruit is ready to harvest for export or cold storage which would be approximately 50 days before it matures on the trees.

In the light of these findings it is suggested that the grower should:

1. Ascertain the ingredient of any stop-drop spray purchased and make sure that it is suitable for his purpose.
2. Add a spreader and spray thoroughly.
3. Use two sprays of NAA at 10 parts per million at fortnightly intervals if fruit is to be cold stored or exported.
4. Use 245TP at 25 parts per million 30 days before harvest if all fruit from the sprayed trees is to be placed on the local market early in the season.
5. Use the above spray at 10 parts per million if later local marketing is his object.
In the light of these recommendations it may be necessary for some growers to divide up their trees using all the fruit from some for one purpose and all the fruit from the remainder for another purpose.

In general it would appear that, although 245TP has its uses where fruit is to be placed straight on to the local market, NAA is a safe and effective stop drop spray if applied in the correct manner.
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