

Chemical Control of

PRE-HARVEST DROP IN APPLES

Cooperative Extension Service

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PRE-HARVEST DROP (the premature abscission) of fruits before and during harvest is always a potential problem with McIntosh, and in many years, with other varieties that ripen with and later than McIntosh.

Three chemicals have been cleared for use which are effective in reducing pre-harvest drop to varying degrees. The chemicals are *alpha*-naphthaleneacetic acid (NAA), 2,4,5-trichlorophenoxypropionic acid (2,4,5-TP) and 2,4,5-trichlorophenoxyacetic acid (2,4,5-TA).

Alpha-naphthaleneacetic acid (NAA) — is effective on all varieties and is generally used at the rate of 10 ppm (parts per million). It becomes effective in about 48 hours after application and controls fruit drop for a period of 7 to 10 days. To obtain a longer effective period, NAA applications may be repeated; however, more than two applications may accelerate ripening.

2,4,5-trichlorophenoxypropionic acid (2,4,5-TP) — is suggested at the rate of 7 to 10 ppm on varieties ripening before McIntosh and at the rate of 10 to 20 ppm for varieties ripening in the season of McIntosh or later. 2,4,5-TP becomes effective in about 4 days and at 20 ppm, controls fruit drop for 14-20 days. This chemical may accelerate maturity in summer varieties and, consequently, is not suggested for use on these varieties.

In Michigan, 2,4,5-TP has not been found to influence the ripening and storage qualities of McIntosh or those varieties ripening after McIntosh when the apples are picked at optimum maturity for holding in regular or CA storage.

2,4,5-Trichlorophenoxyacetic acid (2,4,5-TA) — This chemical has been cleared and found effective on McIntosh. Michigan growers have not had the experience with 2,4,5-TA as with NAA and 2,4,5-TP and consequently it is being suggested on a *trial basis only*. 2,4,5-TA should be applied 4 to 5 days before anticipated drop begins and only when the fruits will be harvested within 2 weeks of the application date. The suggested rate is 10 ppm. Do not make more than one application.

Precautions in the use of pre-harvest drop chemicals

1. Follow instruction on label.
2. Do not use higher concentrations or number of applications recommended.
3. For NAA — do not make more than 2 applications and do not apply closer than 5 days before harvest.
4. For 2,4,5-TP — do not make more than 1 application and do not apply more than 14 days before harvest.
5. For 2,4,5-TA — do not make more than 1 application and do not apply more than 14 days before harvest.
6. It is *essential* that the fruit is harvested at optimum maturity. Since these chemicals do delay fruit abscission, there is a potential hazard for growers in permitting the fruit to become overmature while still on the tree.
7. The effectiveness of these chemicals depends on good spray coverage and having foliage free from serious mite, frost and scab damage.



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