

PROHEXADIONE-CA AND CROP PROTECTION IN POME FRUIT TREES

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Prohexadione-Ca (ProCa - contained in the products Apogee® and Regalis®) is a new plant bioregulator for use in pome fruits. Trees pre-treated with ProCa are less affected by diseases such as fire blight and scab and by different types of insect pests although the compound is inactive as a bactericide, fungicide or insecticide. ProCa leads to growth reduction by blocking gibberellin biosynthesis. However, it can largely be ruled out that its effect on morphological or histological structures is of major direct relevance for disease and insect pest incidence. In treated shoots, ProCa causes also considerable changes in the spectrum of flavonoids. Convincing evidence is now available that ProCa triggers pathogen resistance by inducing the formation of 3-deoxyflavonoids, in particular luteoforol, with phytoalexin-like properties. Luteoliflavan, another flavonoid, is also found only after treatment with ProCa. This compound is known to be an inhibitor of insect growth, which may explain the observed effects on insect pests. Another advantage with regard to plant protection results from the fact that ProCa-treated trees have a more compact but open canopy, thereby enabling better spray penetration and coverage for fungicide or insecticide treatments.