

Effects of burying and removing dead leaves from the ground on the development of scab epidemics in an apple organic orchard.

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Abstract

Ascospores produced on scabbed leaves in the leaf litter constitute the primary inoculum causing scab infections in apple orchards during the year. The trial, carried out in a commercial organic orchard, permitted to evaluate the effects of the removal of dead leaves located on the inter-row supplemented by the ploughing in of the leaves left on the row, on the development of scab epidemics. From the first recorded contamination to harvest time, lesions on leaves and fruits were counted to determine reduction in disease incidence and severity, compared with the untreated plots. Disease severity as a function of the distance from the untreated plot was also observed, to evaluate the spore dispersal gradient within the orchard. The results show that the ploughing in and the removal of the litter reduced disease incidence by 62% on leaves, and by almost 82% on fruits to harvest. Moreover, measurements of the dispersal gradient show that the spores do not disperse, or little, beyond 20m of the untreated zone.