

Local Lesions in Psorosis

THERE ARE TWO TYPES of lesions in psorosis: the early generalized lesions, which consist of a faint mottling of young developing leaves and are present at all stages in the life of the tree including trees in the nursery, and localized lesions, which in naturally infected trees develop only after several years and increase in size at a very slow rate. Local lesions occur in the bark of the trunk and limbs as more or less regularly shaped areas where the bark breaks off as scales and flakes, on the blades of leaves as oval, chlorotic spots, and on the rind of fruits as multiple, circular, concentric furrows or depressions.

If a bark patch from a scaling lesion of a psorosis-affected tree is grafted onto the bark of a healthy tree, scaling of the healthy bark around the graft sets in within a few months and spreads more or less rapidly to the entire tree. The conclusion from such results is that two different kinds of particles of the same virus are the cause of localized and of generalized lesions, respectively. Statistical studies of the incidence of new local lesions that develop after a few years on trees on which the number of lesions had been counted showed that there is a highly significant, positive correlation between the number of new lesions and the number of old lesions per tree. Scraping of local lesions in order to remove the superficial layers of diseased bark significantly reduced the incidence of new lesions, as compared to untreated trees. These results are interpreted as evidence that a virus particle of an old lesion may occasionally escape from the lesion and start a new local lesion at another point on the bark of the tree.

It is suggested that local lesion particles derive from the particles that produce the generalized symptoms as a result of a simple change

BITANCOURT

in the molecule. Considering the easy spread of the systemic particle and the slow spread of the local particle—even when introduced directly into a healthy host—the change might be an increase in size of the molecule resulting from an aggregation of two to several of the elementary particles that cause the generalized lesions. In a sense the local particle would be a polyploid of the systemic particle.