

The Main Seedling-born Diseases Occurring in Grapes[©]

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The seedling-born diseases, crown gall, berry inner necrosis, leaf roll, and rugose wood complex (pitting, grooving), have lately occurred on grapes in Japan.

Crown Gall. The disease caused by *Agrobacterium vitis* produces galls on the seedlings and the trunks of affected grapes. The pathogen is easily detected from the grape sap of infected grape using selective media.

Berry Inner Necrosis Disease. In grape cultivars, 'Kyoho' and 'Pione', infected leaves become small, mosaic, and deformed, and necrosis occurs in the flesh of affected berries. The causal agent, grapevine berry inner necrosis virus (GINV), is transmitted by *Colomerus vitis* and grafting.

Leaf Roll Disease. Leaf symptoms include rolling and a violet-red color. The grapevine leaf roll-associated viruses (GLRaV-1 to 7, especially GLRaV-3) belong to the Closter virus and have been reported as causal agents. Though it has been reported that this disease is transmitted by a kind of *Pseudococcus* sp. in overseas countries, its method of transmission in Japan is not known. I have recently observed this disease in a field. Currently we are studying the vector(s) of this disease.

Rugose Wood Complex. The symptoms, pitting and grooving, appear on shoots of grapevine. From the reaction of indicator grape plants ('Saint George', LN33, Kober-5BB), this complex was divided into four diseases: corky bark, Rupestris stem pitting, Kober stem grooving, and LN33 stem grooving. Of these diseases, corky bark has already been reported in Japan, but the other diseases have received very little research attention in Japan.