

TRANSMISSION OF PLANT VIRUSES

The viruses are non-motile. They are carried passively from one place to other. The following modes help in transmission of plant viruses.

① TRANSMISSION BY CONTACT → Several viruses such as TMV are transmitted by contact. The plants grow very closely and ~~in such contact~~ ^{and make contact with other plants} they frequently rub against each other to cause abrasions. The cell saps come in contact and viruses are transmitted to healthy plants. Sometimes the sap of diseased plants comes in contact of healthy plants through implements. Again grafting is another important method of contact transmission.

② TRANSMISSION THROUGH SEEDS AND ORGANS OF VEGETATIVE PROPAGATION → Seeds produced by diseased plants carry virus particles in their seed coats, endosperm or embryos. ^{Such} ~~Such~~ seeds give rise to infected plants. The organs of vegetative propagation such as tubers, bulbs, rhizomes, stem cuttings etc. derived from diseased plants also give rise to infected plants.

③ TRANSMISSION THROUGH NEMATODES → The nematodes are important carriers of viruses. Some nematodes transmitting viruses include Longidorus, Xiphinema and Trichodorus. There are many more nematodes that transmit plant viruses.

viruses are transmitted by these nematodes

④ TRANSMISSION THROUGH FUNGI → Some fungi like chytrids also act as vectors of viruses. These include Olpidium, Syndytrium etc. The viruses contained in plant debris can reach long distances through water.

⑤ TRANSMISSION THROUGH APHIDS → Aphids are most important among all insect vectors carry viruses to long distances. These viruses may be non-persistent or persistent. It depends upon the shorter or longer duration of their spread through aphids. The non-persistent viruses lie in epidermal cell of host plant and get attached to the mouth parts of the aphids which carry them to large numbers of plants. The circulative viruses multiply inside the body of the aphids and pervade the whole body.

⑥ TRANSMISSION BY LEAF HOPPERS → Leaf hoppers show greater biological relationship with the viruses than the aphids. The viruses transmitted by leaf hoppers are not transmitted by other vectors. This is called vector specificity.