Mosaic Diseases of Cucurbits

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ABSTRACT

Many viruses affect grape crops or pumpkin crops and cause mosaic lesions. The most important of these viruses in the Midwest are cucumber mosaic virus (CMV), mosaic pumpkin virus (SqMV), watermelon mosaic virus (WMV), and tobacco ring spot virus (TRSV). Viruses vary in the range of host plants they infect, in the ways they survive between cultures, and in the ways in which they are transmitted. Because management programs are based on this information, it is important to identify the relevant virus or viruses.

Keywords: Viruses, mosaicviruses, mosaic cucumber, Symptoms of COI, virus-ring spottabaca (TRSV,mosaicporays, virusmosaiciaarbuza (WMV).

This viral complex has forced growers in some areas to stop growing these erops. The symptoms caused by different pumpkin viruses are usually very similar. It is impossible to identify these faults with certainty based on symptoms alone. Usually, for the correct identification of the pumpkin virus, special laboratory and greenhouse studies are required. CUCUMBER MOSAIC VIRUS(CMV)Cucumber mosaic is the most destructive and widespread variety of cucumber and melon worldwide. All grape crops are under attack, as well as a wide range of annual, biennial and perennial crops and weeds from about 40 families. The virus is made up of many different strains that vary in a number of aspects, including host range, symptoms, and modes of transmission. CMV strains were re-differentiated based on symptoms on host plants. Symptoms. Pumpkin plants can become infected at any stage of growth, from the emergence of shoots to almost complete maturation. External symptoms may appear within four or five days of infection of young plants, but may take up to 14 days as the offspring become older and more mature. Symptoms develop faster at temperatures of 79 to 89F (26 to 32 °C) thanat temperatures of 61 to 75 °F (16 to 24 °C). The severity of symptoms depends at least in part on the concentration of the virus. Symptoms of CMV in cucumber are more severe on plants exposed to a short day or in low light than on plants exposed to long days and bright light. Pumpkin plants are rarely infected at the stage of germination. When this happens, the cotyledons can turn yellow and wither. The new leaves are slightly colored in a yellowish-green color, remain small, wrinkled and deformed. Plants infected at the sprouting stage remain dwarfed or may die and rarely bear fruit.

When strong grape crops become infected at the stage of 6 to 8 leaves, symptoms first appear on the youngest, still growing leaves, on the leaves of which greenish-yellow or dark green spots appear (Fig. 1). In soft form, the leaf may have to be held in the light to see the mosaic or specks. The leaves are often stunted, deformed, wrinkled and twisted. Grapevines are sometimes dwarf and can be yellowish near the center of the hill and

"bunched" due to the shortening of the stem between the leaves. In severe cases, all but the youngest leaves on the tops of the shoots can quickly turn brown and die. When a plant becomes infected in the middle of the season, previous growth remains normal and produces healthy fruit. All leaves, petioles and stems formed after the onset of the first symptoms have dwarfism. Such plants bear little fruit. Typical mosaic symptoms develop only on actively growing leaves. New leaves with mosaic symptoms appear slowly. Cucumber fruits may have yellow and green spots or dark green "warts" on pale green fruits. Cucumber grown in the later stages of the disease is sometimes smooth and pale whitish-green (the so-called "white brine") and more dull at the ends than a fruit obtained on healthy breeds. The berries of watermelon, musk melon and pumpkin can be spotted and warty, while individual areas may have a lighter color than the surrounding tissues. A few fruits are tied to infected plants at the beginning of the growing season. Fruits that do develop are often of poor quality. Mosaic cucumbers in raw form have a bitter taste, and marinated in brine become soft and wet. Plants affected by IFCMValso have root rot caused by soil fungi, including the species Pythium and Fus arium,theywither, break down and die within seven to ten days of the first symptoms appearing. This suggests that these pathogens have a synergistic effect. The CMV disease cycle survives in winter in bodies of water, including perennial weeds such as worm cucumber, burdock, catnap, milkweed, field urticaria, milkweed, milkweed, chubushnik, motherwort, nightshade, thorny, onion, white mollusk, wild milkweed. cucumbers and wild marmots. The virus also survives in the seeds of at least 19 plant species, including wild cucumber, starfish, corn sausage, pumpkin, red nettle, zucchini and several inbred melon lines. CMV is usually introduced into cultivated grape fields and orchards by more than 60 species of aphids, after they catch the virus, feeding on reservoir hosts for a few seconds to a minute. Primary infection can also occur as a result of mechanical contamination, especially in greenhouses, on the hands of workers and knives when working with plants, as a result of the use of infected seeds and feeding virus-infected, striped and 12-spotted cucumber beetles. The secondary spread of the disease in the acropa is usually the result of the action of aphid vectors, but can occur when workers treat healthy plants after treating infected plants, as well as feeding cucumber beetles. The cycle ends when reservoir hosts become infected, usually by feeding virus-infected aphids, sometimes due to infected weed seeds or very rarely when sowing seeds of cultivated pumpkins.

Epidemics of CMV and other pumpkin viruses that are spread in a variable manner by aphids depend on the number of virus reservoir weeds, wild and cultivated host plants, the number of insect vectors, and the proximity of the original plants infected with the wine to pumpkin plants in fields and gardens. When aphids are abundant and source plants are present near grape crops, many pumpkin plants can become infected from an external source of CMV within a short period of time during the cycle of primary infection. When the source plants of the virus are few or far between pumpkin plants, aphids are present, and after CMV is injected from the outside on a relatively small number of plants within the planting of pumpkins, most grape crops become infected again during secondary disease cycles from plants infected with CMV. in the village or in the garden. This first leads to a slow increase in the number of infected plants followed by a rapid increase, since the source of CMV is not a factor limiting longevity. ZUCCHINI MOSAIC VIRUS(SQMV)Zucchini mosaic is much less common than cucumber mosaic virus. SqMV affects most pumpkins, however most isolates or strains do not affect watermelon. Other plants infected with SqMVinclude fragrant peas, coriander, and saladcherville. SqMV can lead to significant losses in the cultivation of zucchini and musk crops. The various SQMV isolates can be divided into two groups based on serological studies. Group I infects watermelon, causes serious symptoms in melons, but only mild symptoms in pumpkins. Group II does not infect watermelon, causes only mild symptoms

on the melon and causes serious symptoms on the pumpkin. The first symptoms of zucchini, pumpkin and zucchini include the clearing of veins and the appearance of yellowish spots on young leaves. Infected leaves tend to rise up and light dark green specks appear on them. Zucchini leaves can look strongly distorted, even filamentous, with regular marginal protrusions from veins. Leaf processes or curls can develop on the lower surface of the leaves. Summer fruits of zucchini have distorted convex domed swellings. Yellow spots appear on the first leaves of the cucumber, followed by noticeable yellow streaks and veins. Young leaves can be twisted and bent upwards. Leaves that form later show minor or no symptoms, and the original symptoms disappear with hot weather, so it can be difficult to identify an infection. Slight yellowing of veins followed by spots, yellow spots and a green stripe along the veins is common on infected musk melon plants. On other melon leaves, yellow stripes, spots or general yellowing along the veins appear. Some leaves are slightly distorted, the veins extend beyond the edges of the leaves. The SqMV disease cycle survives between planting grape crops in infected pumpkin weed hosts, in infected seeds (up to 4.5% depending on the isolate and culture), and in wintering beetles. Of course, with the help of seeds it is possible to spread over long distances.

Cucumber beetles can become infected after feeding an infected plant for as little as five minutes, and can then transmit the virus from plant to plant for 4-20 days, depending on the species of beetle. Beetles pass on wine by regurgitation of liquid during meals. Aphids and other insects are not carriers of the squash mosaic virus. Sowing infected seeds is considered the most important primary source of inoculate. Plants grown from infected seeds serve as an inoculum for secondary disinfection cycles. Mosaic watermelon virus(WMV)Mosaic watermelon virus is a problem primarily in the southern and western states. Synonyms of WMV include a mosaic of melon and melon and a mosaic of yellow watermelon. There are at least two strains of the virus, which are called WMV-I (= papaya annular spot virus, type W)and WMV-II. WMV-I affects only 38 species of the cucumber family(Cucurbitaceae),while strain II affects pumpkin and some other plants, including alfalfa, raspberry clover, mallow (Malvaparviflova),peas, mountain snow, sour clover and vetch. Strains of the virus can be distinguished serologically, by the circle of hosts and by indicator plants. With early infection, watermelon, musk melon, summer and winter zucchini and pumpkin can lose 50% or more of the yield and fruit quality. Symptoms All parts of infected plants may be affected. Symptoms depend on the host plant and its age when infected. Watermelons and musk melons are usually stunted or dwarf, with yellow or light green spots, leaf deformation, blisters and slight yellowing. When musk melons become infected at a young age, they greatly decrease in size and produce little, if any, marketable fruit. Symptoms on winter pumpkin leaves range from pale green to severe yellowish spot. Lacavas are deformed, wrinkled or covered with blisters. Affected plants range from minor to highly distorted. Blue hubbard and pumpkin can become stunted and thick due to shortening of the internodes and form stunted lateral stems. Knotted growths cover the fruits, which are sometimes severely deformed. The symptoms of summer squash are similar to those of winter squash. In addition, the stems between the nodes usually have an elongated shape, resulting in a plant resembling a vine. On infected yellow fruits, noticeable green growths appear.

On the leaves of the cucumber can develop a homogeneous mosaic from green to dark green color (Fig. 6). The fruits are stunted, twisted, knotty, and sometimes knotty. The homogeneity of symptoms can be confused with damage by an herbicide or other abiotic disease. Fortunately, the major weeds, crops, and wild reservoirs of the watermelon mosaic virus are not found in Illinois. It is generally believed that these viruses are not transmitted through seeds or transmitted through seeds in very small quantities. By far the most important means of distribution in nature are numerous species of aphids, especially the

green-peach aphid(AMyzus persicae). This aphid can catch the virus from an infected plant in less than 15 seconds and transmit it to a healthy plant after feeding in just 9 seconds. Symptoms usually appear one to two weeks after vaccination. Primary disinfection cycles usually begin with the transmission of the virus from reservoir hosts to pumpkin plants, often from a considerable distance. Cycles of secondary infections develop when aphids transmit the virus to healthy plants from plants infected during the primary cycle. TOBACCO FRIDAY VIRUS(TRSV)The tobacco spot virus found in many strains affects all pumpkin vegetables. The virus has a wide range of hosts, including at least 260 plant species from 54 families. It affects many cultivated and weedy plants. The cucumber strain is different from the tobacco variety and causes cucumbers more severe symptoms than the usual strain of tobacco. Symptoms Musk melon is stunted or dwarf with yellowish-green, spotted and deformed leaves. On young leaves soon after infection, spots similar to a halo can form. The spots have dot spots that appear to be soaked in water. Usually there are certain rings. The number and size of fruits are reduced. Symptoms caused by TRSVare masked a few weeks after the plants are infected. Watermelon plants are dwarf and yellowish. The tips of infected vines often stand upright rather than in a normal position on healthy plants. The leaves are coarsely speckled and dotted with irregular black spots, somewhat resembling anthracnose lesions. Severely affected leaves become torn and brittle. As plants mature, they tend to recover slightly, with symptoms more persistent on watermelon than on musk melon. Plants affected by the virus usually do not produce marketable fruit. The fruits are often warty and can secrete small droplets of fluid on the affected areas of the surface. Pumpkin fruits usually form concentric rings. Zucchini plants are strongly delayed in growth. The leaves sometimes deform with the appearance of bubbles and yellowing of the veins. Sometimes there are annular spots and yellow spots associated with the veins. Q

Symptoms camouflage on old plants, and the affected plants seem to recover. However, when eating pumpkin, the symptoms persist longer than when eating other pumpkin vegetables. Tiny yellow spots appear on the leaves of the cucumber. The new leaves are spotted and look like leaves infected with cucumber mosaic virus. When the temperature rises and the plants grow rapidly and bear fruit, the symptoms on the newly formed leaves are masked. Plants seem to be recovering. Fouit, however, became spotty. The TRSV disease cycle survives between plantings of pumpkins in Mummerian, weeds, and wild host plants, in infected seeds, and possibly in the vector of the common dagger nematode(Xiphinema americanum). Transmission of seeds through melons, cucumbers and musk melons is rare. It was found in 2.5% of pumpkin nut seeds of infected plants, but was not found in other pumpkin seeds. Transmission through seeds, however, occurs in dandelion, amaranth, lettuce, petunia, soy, and tobacco. The nematode vector is known to preserve the virus and maintain virulu-bearing capacity for up to 49 weeks at 50 °F (10 °C). The nematode spreads through any agency that moves contaminated soil, such as agricultural equipment and implements, and diverts water. Nematodes rarely move more than 30 inches on their own during the growing season. The optimal temperature for infection and transmission of the virus to cucumber is 82 °F (28 °C), which may be due to the degree of attractionof nematodes to the roots. Other TRSVvectorsthat have been involved include species of ticks, thrips, grasshoppers, and flea beetles. Other methods of spreading pumpkin in a field or garden include mechanical transmission through cutting tools and rubbing fallen leaves against healthy leaves. Infected zucchini pollen can infect healthy plants. Symptoms appear three days after mechanical inoculation. The pattern of symptoms in some crops goes from the edge of the field inwards, which strongly suggests that the dagger nematode is not always the main vector. Insects and mites are thought to pick up TRSV from host plants near a field or garden and pass it on to cultivated plants as they spread in

the area. The main suspected vectors in such cases are spider mites and thrips. Control measures 1. Destroy all biennial and perennial weeds and wild ponds in greenhouses, beds, gardens and fields. It is especially important to eradicate the series and wild cucumbers, catnap, mint, starfish, clover, curly milkweed, dandelions, fleas, flowering milkweed, surrogate, urticaria, dimsonweil, milkweed, motherwort, nightshade, lilies of the valley and white shell. On a plot at least 10 feet wide in the immediate vicinity of the greenhouse, there should be no vegetation. In a field or garden, a distance of at least 100 yards between susceptible crops and diseased weeds and susceptible wild plants is recommended. Include plants in mounds of ditches, hedges or rows of fences and elsewhere.

2. Regularly fumigate greenhouses to combat aphids and other insects. Keep fans and other holes well protected. If possible, do not grow cucumbers or other melons in beds or greenhouse areas in which flowers and flower beds are grown. 3. Regularly apply insecticides in and around a greenhouse, garden, or field to kill aphids, cucumber beetles, and other insects. It is important to kill insects before they have the opportunity to infect grape crops and switch from plant to plant when planting pumpkins. . 4. Grow resistant varieties of cucumbers. Most new varieties are resistant to CMV. For this information, refer to current seed catalogs and industry publications. 5. If possible, seeds certified for plants and free of viruses. Don't grow a pointed culture next to a plant affected by a mosaic. 6. Do not plant pumpkins, especially zucchini in late autumn and summer, near fields previously planted with other grape crops. 7. If possible, tear out and destroy the first infected plants, but only after the first thorough spraying of these plants with an insecticide to kill any insects that may take refuge on these plants. 8. Do not touch healthy plants after working with mosaic-affected plants. In this case, you must first thoroughly wash your hands with hot running water with strong soap. It is even better to use a solution of trisodium phosphate (2 tablespoons dissolved in 1 liter of water). 9. Speed of spread of mosaic viruses CMV and WMV can be reduced by using (a) aluminum reflective mulch to repel aphid vectors, (b) one or two weekly applications of a combination of mineral oil emulsifier (e.g., JMX Stiletto-Oil as a 0.75% emulsion (7500 parts per million) at the rate of 3 liters per 100 gallons in a tank mixture at a pressure of 400 psi) and (c) wheat grown in and around pumpkin crops as a "protective crop". attracts infectious aphids, and their feeding presumably dilutes the virus during successive studies, so much of its infectivity is lost. Wheat causes little shading, is attractive to aphids, does not serve as a host for aphids to reproduce, is not a host for most pumpkin viruses. or other pests of grape crops, and they can be easily removed 10. Seed treatment, crop rotation and fungicide spraying are ineffective in the fight against mosaic diseases.

Literature:

1. 1."What's so good about winter pumpkin?" (PDF). University of the District of Columbia. Retrieved January 14, 2015 .
2. Mansour, Esam H.; Dvorshak, Erno; Lugasi, Andrea; Barna, Barna; Gergely, Anna (1993). "Nutritional Value of Pumpkin Seed Products(Cucurbita Pepo Kakai 35)". Journal of Food Science and Agriculture. 61 (1): 73–78. DOI: 10.1002 / jsfa.2740610112.
3. Merrick, Laura S. "Natural hybridization of the group of wild Cucurbita sororia and domesticated C. mixta in southern Sonora, Mexico." North Carolina State University Retrieved November 24, 2014.
4. "Pumpkin". Drugs. com. 2009. Retrieved 1 September 2013.
5. https://FermoVed. ru/ogurtsyi/bolezni-i-ih-lechenie. html