## DNA VIRUS (CAULIFLOWER MOSAIC VIRUS)

The Cauliflower Mosaic Virus (CaMV) is a plant pathogenic virus that primarily affects members of the Brassicaceae family, which includes plants like cauliflower, cabbage, broccoli, and mustard. CaMV belongs to the Caulimoviridae family and is one of the most well-studied plant viruses. It was the first plant virus discovered to utilize a DNA genome and replicate via reverse transcriptase. CaMV has a circular double-stranded DNA genome, distinguishing it from many other plant viruses that possess RNA genomes. The viral particle has an icosahedral structure, with a diameter of approximately 50-55 nanometers. The CaMV genome consists of approximately 8,000 base-pairs of circular, doublestranded DNA. The genome encodes seven genes (gene I to gene VII), also called P1 to P7 for encoded proteins 1-7.

The primary mode of transmission of Cauliflower mosaic virus is through aphids, which act as vectors by feeding on infected plants and subsequently transmitting the virus to healthy ones. The virions make their way to insert themselves into the plants nuclear envelope where they inhibit growth and structure of the host. CaMV can also spread through infected seeds, contributing to the persistence and dissemination of the virus in agricultural settings.

**Symptoms:**

1. **Vein Clearing and Mosaic Patterns:**

Infected plants often display symptoms such as vein clearing, mosaic patterns, and leaf distortion.

The mosaic patterns result from the virus disrupting the normal development and functioning of plant cells.

2. **Stunted Growth and Reduced Yield:**

CaMV infection can lead to stunted growth, reduced vigor, and a decline in overall plant health.

Infected plants frequently experience a decrease in yield, affecting the quality and quantity of harvested crops.