

## VIRUS PROBLEMS IN CUCURBIT

*By Dr. Rebecca Creamer, UCR Plant Pathologist*

The following table is supplied by Dr. Creamer, UCR plant pathologist, to help explain the complex web of viruses that affect cucurbits. The table lists the virus as well as their host range and vectors. The table is a summary from Dr. Creamer's presentation on viruses at a cucurbit workshop in Riverside May 28, 1998.

### Overview of insect vectors and virus transmission modes

| Target Crop                              | Group         | Host Range                | Severity of losses in California | Transmission mode   |
|--|---------------|---------------------------|----------------------------------|---|
| <b>Squash mosaic</b>                     | comovirus     | narrow host range minimal | CA losses and incidence          | Transmitted by <i>seed and beetles</i> , control by clean seed  |
| <b>Cucurbit aphid - borne</b>            | luteovirus    | narrow host range         | unknown CA losses                | Persistent transmission by <i>aphids</i>  |
| <b>Squash leaf curl</b>                  | geminivirus   | narrow host range         | no CA losses                     | Persistent whitefly transmission ( <i>sweetpotato whitefly</i> )  |
| <b>Beet curly top</b>                    | geminivirus   | broad host range          | some CA losses                   | Persistent leafhopper transmission ( <i>beet leafhopper</i> )   |
| <b>Lettuce infectious yellows</b>        | closterovirus | broad host range          | no CA losses                     | Semi-persistent whitefly transmission ( <i>sweetpotato whitefly</i> )   |
| <b>Cucurbit yellow stunting disorder</b> | closterovirus | narrow host range         | not in CA                        | Transmitted by <i>sweetpotato and silverleaf whiteflies</i>   |
| <b>Beet pseudo yellows</b>               | closterovirus | broad host range          | minimal CA losses                | Transmitted by <i>greenhouse whitefly</i>   |
| <b>Cucumber mosaic</b>                   | cucumovirus   | broad host range          | moderate CA losses               | Transmitted non-persistently by <i>aphids</i> - green peach and cotton- melon aphids                                |
| <b>Zucchini yellow mosaic</b>            | potyvirus     | narrow host range         | large CA losses                  | Transmitted non-persistently by <i>aphids</i> - green peach and cotton- melon aphids                                |
| <b>Watermelon mosaic</b>                 | potyvirus     | moderate host range       | moderate CA losses               |   |
| <b>Papaya ringspot</b>                   | potyvirus     | narrow host range         | minimal CA losses                | Control ZYMV by removing infected source weeds, insecticides don't work, no good resistance for ZYMV yet commercial |