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### 2003 Coachella Valley Vegetable Disease Review

The Farm Advisor and Coachella Valley Pest Control Advisors collected the plant samples used in this report that covers 2003. Where the pathogen was identified it is listed. Note that not every problem led to a pathogen being identified. This is not a complete list of diseases in the Coachella Valley. Some common diseases and control measures are listed in the UCIPM web site. Please refer to this web site for insect and disease control information:

<http://www.ipm.ucdavis.edu/>

#### ARTICHOKE

01-02-03

**Symptoms:** Mature plants with leaves wilting.

**Pathogen:** No fungus or bacteria were recovered from plant tissue. In past, *Fusarium* sp. has been isolated in plants with similar symptoms.

#### BASIL

1-24-03

**Symptoms:** Transplanted basil dies back. Plants collapse. Roots appear abnormal.

**Pathogen:** pathologist found some *Fusarium* spores on the roots, ruled out as the cause of death. No disease plated out from within the roots.

12-19-03

**Symptoms:** Basil plants in the greenhouse have very deformed top growth. Some employees suspected the affected plants might be genetically off types.

**Pathogen:** Found plants loaded with mites. Suspected broad mite, did not get mite identified. The mite is causing the leaves to grow deformed.

#### BELL PEPPERS, CHILI PEPPERS:

03-20-03

**Symptoms:** Plants were stunted, some leaves were deformed and some plants also dieback. Roots have some internal discoloration.

**Pathogen:** One sample sent to virologists at UC Davis, no virus detected.

**Pathogen:** Another sample sent to UCR. Root system was very small, recovered *Fusarium* sp. primarily with some *Rhizoctonia* sp.

04-15-03

**Symptoms:** Powdery mildew growth on leaves.

**Pathogen:** Powdery Mildew (*Leveillula taurica*).

05-14-03

**Symptoms:** Virus like discoloration on upper leaves.

**Pathogen:** Powdery Mildew (*Leveillula taurica*).

05-28-03

**Symptoms:** Plants are stunted in growth.

**Pathogen:** Plants loaded with root-knot nematode.

09-03-03

**Symptoms:** plants are dying back.

**Pathogen:** *Rhizoctonia* sp. primarily and some *Pythium aphanidermatum* present.

09-15-03

**Symptoms:** Young transplanted peppers are dying back. Roots are sloughing off. Field has lots of rubble from previous crop.

**Pathogen:** *Pythium aphanidermatum* plated out.

10-29-03     **Symptoms:** Yellowing of upper leaves, affected plants are scattered in the field.  
**Pathogen:** Roots are loaded with galls formed by root-knot nematodes. Yellowing is due to lack of nutrient uptake.

## CAULIFLOWER

1-27-03     **Symptoms:** Small brown spotting appears on the cauliflower head. Area affected increases in size.  
**Pathogen:** Brown rot caused by *Alternaria* sp. Infection requires rain or dew that persists for more than 9 hours.

## CELERY

9-25-03     **Symptoms:** Transplants are dying back. Many do not grow out of the plug.  
**Pathogen:** One small colony of *Rhizoctonia* sp. plated out, pathologist does not believe it is the cause of this problem.

10-14-03    **Symptoms:** Roots have some sort of mold growing on them.  
**Pathogen:** *Fusarium* sp. plated out. In another field with similar problems, *Fusarium*, *Pythium* and *Rhizoctonia* plated out. These pathogens would cause Damping-Off and Root rot.

## FENNEL

12-15-03    **Symptoms:** Plant stem and leaves have sickly appearance. When the basal portion is cut, there is some discoloration in the xylem and phloem.  
**Pathogen:** Bacterial blight, caused by *Pseudomonas*, this sample also had *Rhizoctonia* sp.

## EGGPLANT

06-04-03    **Symptoms:** Chinese eggplant fruit with blossom end cracking.  
**Pathogen:** No pathogen isolated. Rapid cell growth is weather induced; rotting on blossom end is secondary.

## LETTUCE

01-06-03    **Symptoms:** Romaine lettuce with lots of dieback.  
**Pathogen:** Positive for Tomato Bushy Stunt Virus. (TBSV has been renamed).  
01-21-03    **Symptoms:** Romaine lettuce with lots of yellowing on leaves, plants also dieback.  
**Pathogen:** *Rhizoctonia* sp. and *Fusarium* sp. were isolated.  
02-05-03    **Symptoms:** Romaine lettuce are collapsing, outer leaves drop leaving internal leaves upright, these eventually collapse also.  
**Pathogen:** Sclerotinia Drop, caused by *Sclerotinia sclerotiorum* and *Sclerotinia minor*. In this case the pathologist only identified fungus to *Sclerotinia* sp.  
12-09-03    **Symptoms:** Romaine lettuce with lots of stunted plants and dieback.  
**Results:** Tomato Bushy Stunt Virus. Disease is reappearing in previously affected fields.

## ONION

6-28-03     **Symptoms:** Harvested onion bulb is covered with dark fungal growth.  
**Pathogen:** Neck Rot, (*Botrytis Alli* Munn) is a destructive and common postharvest disease. The pathogen can enter wounded tissue such as scars left

by thrip feeding, wind damage, or following damage from other plant pathogens such as Downy Mildew, Purple Blotch, etc.

### **SPINACH**

02-04-03      **Symptoms:** Leaf spots, very widespread on plants.  
**Pathogen:** Blue Mold or Downy Mildew (*Peronospora effusa*).

### **SNAP BEAN**

10-13-03      **Symptoms:** mature bean plants have leaf mottling. Fruit have bronzing.  
**Pathogen:** Negative for Gemini virus infection. Lab suspected it might be Bean Yellow Mosaic Virus or Cucumber Mosaic, but could not confirm.

### **SQUASH, ALL**

03-26-03      **Symptoms:** Butternut squash plants wilt, eventually the whole plant dieback.  
**Pathogen:** No pathogen plated out.

04-18-03      **Symptoms:** Butternut squash with powdery mildew symptoms.  
**Pathogen:** Powdery Mildew (*Sphaerotheca fuliginea*).

09-03-03      **Symptoms:** Crookneck squash is stunted. Plants are light green in color.  
**Pathogen:** Root-knot nematode.

10-13-03      **Symptoms:** Zucchini squash with leaf mottling.  
**Pathogen:** Squash Leaf Curl Virus.

10-15-03      **Symptoms:** Yellow crookneck squash with very stunted growth.  
**Pathogen:** Root-knot nematode.

### **SWEET CORN**

06-19-03      **Symptoms:** Ear is almost ready to harvest and is flagging downwards.  
**Pathogen:** *Fusarium* sp. and *phytophthora* sp. Problem is observed every year.

### **WATERMELON**

04-18-03      **Symptoms:** Watermelon transplants with powdery mildew symptoms.  
**Pathogen:** Powdery Mildew (*Podospeara xanthii* or *Sphaerotheca fuliginea*).

05-12-03      **Symptoms:** Plants wilt and die back.  
**Pathogen:** Sudden Wilt caused by *Rhizoctonia* sp. and *Pythium aphanidermatum*.

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Plant pathologists specialize in their field. When a plant sample is collected a determination must be made by the collector as to the probable causal agent. This is so the sample can be sent to the appropriate Pathologist. The sample may be shown to various pathologists and entomologists. Whiteflies for example can vector several virus diseases. In this example the whole picture must be taken into account and not just the final virus symptom.

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