

Creating a Disease Drought... *preventing common water-related plant health issues*

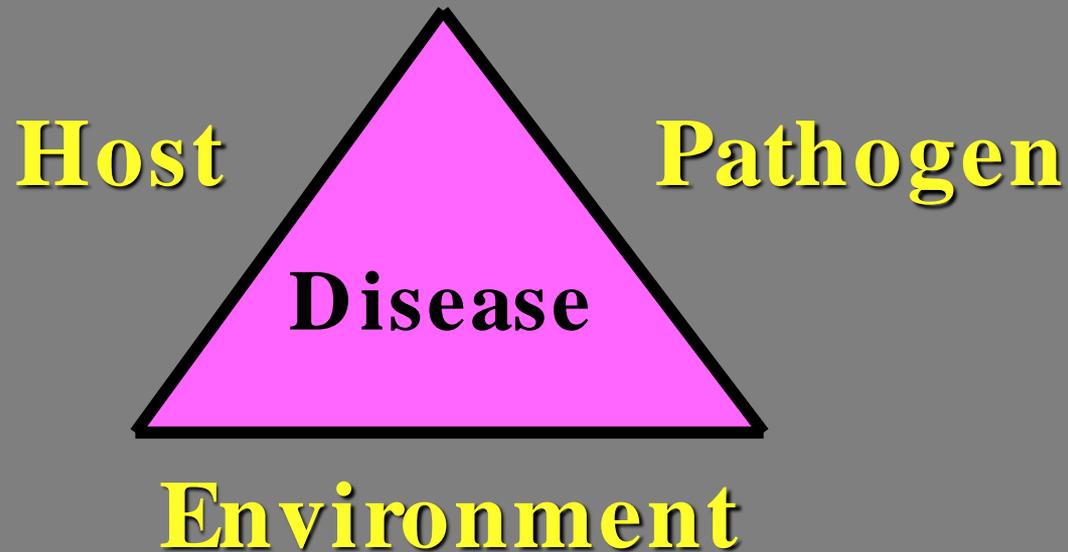


Cheryl A. Smith

Extension Professor, Plant Health Specialist

How can 'water' affect plant health?

Disease triangle



How can 'water' affect plant health?

How can 'water' affect plant health?

Too much

Water-logged roots (*lack of oxygen*)

root dysfunction / death

Symptoms?:



How can 'water' affect plant health?

Too much

Water-logged roots (*lack of oxygen*)

root dysfunction / death

Symptoms?:

nutritional deficiency

root death

wilt

How can 'water' affect plant health?

Too much

Promotes disease development

root rots

Symptoms?:

chlorosis, stunting,
death



How can 'water' affect plant health?

Too much

Promotes disease development

root rots

Symptoms?:

nutritional deficiency, stunting

root death

Wilt

How to diagnose?

check for healthy roots

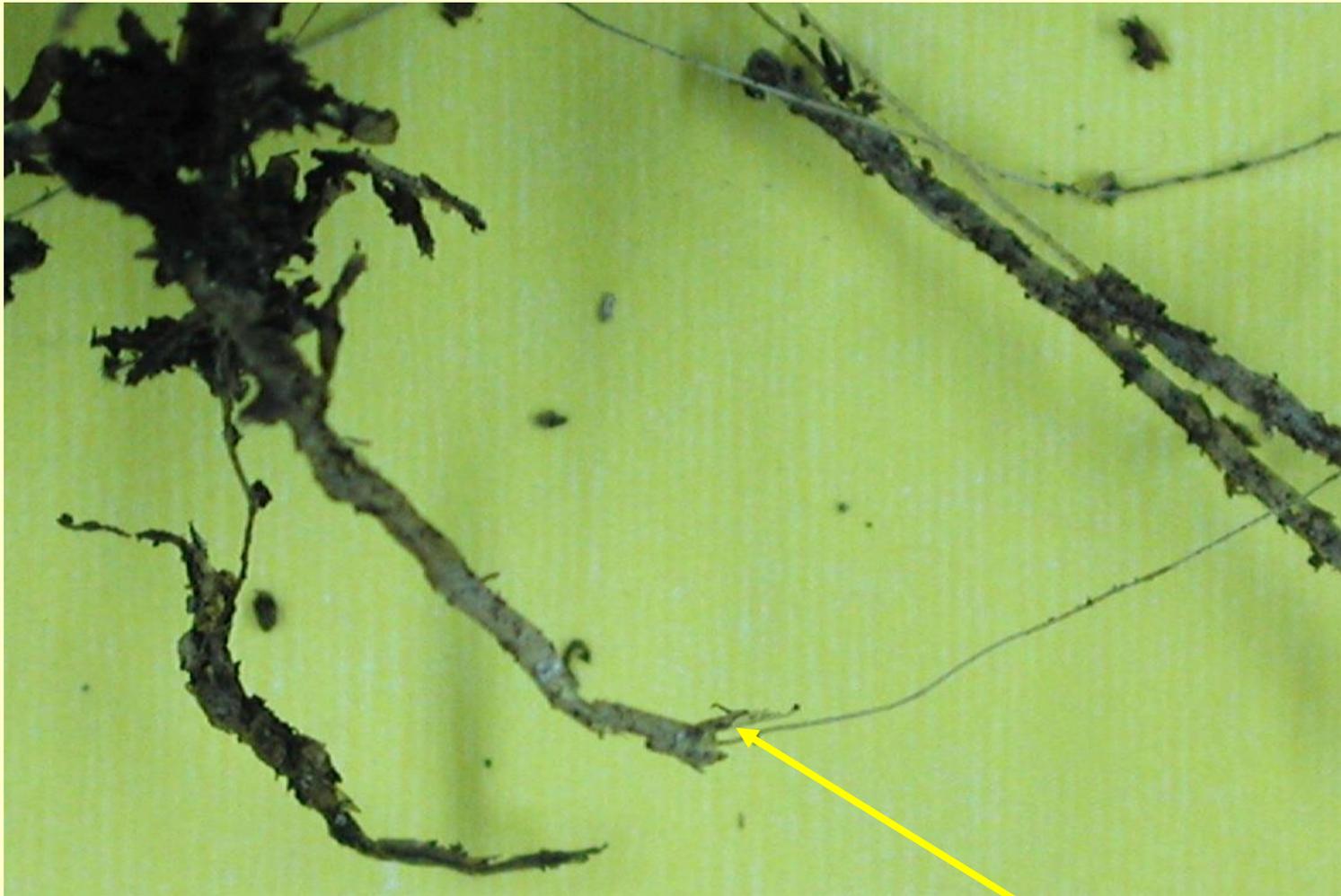


Not good



Pythium root rot – sloughing roots





sloughing cortex

good

How can 'water' affect plant health?

Too much

**Can leach nutrients
& raise pH ... (ie. favor
development of
*Thielaviopsis root rot***



How can 'water' affect plant health?

Too much

can promote increase in relative humidity

**What is the problem with high
relative humidity?**

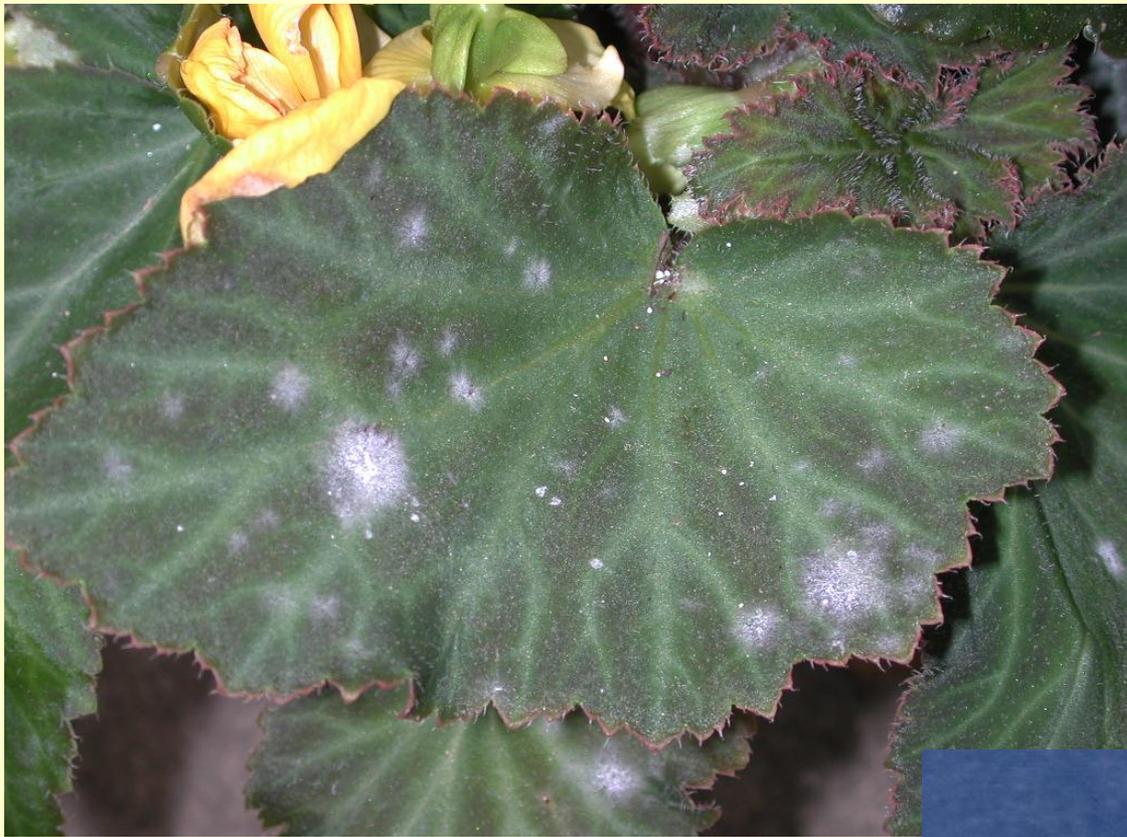


Botrytis blight



Botrytis sporulation

powdery mildew





Sedum - powdery mildew

Powdery Mildew on Sedum



R. Wick



Pansy

Pansy - downy mildew



Basil - downy mildew

Downy Mildew



Argyranthemum



Phlox subulata



Coleus



**impatiens downy
mildew**



Margery Daughtrey photos



**edema
jade plant**

**edema
ivy geranium**



How can 'water' affect plant health?

Too much

can promote increase in relative humidity

**Problems with high relative
humidity...**

**Can also reduce transpiration – reducing nutrient
uptake**

How can 'water' affect Plant health?

Too little

Root dysfunction

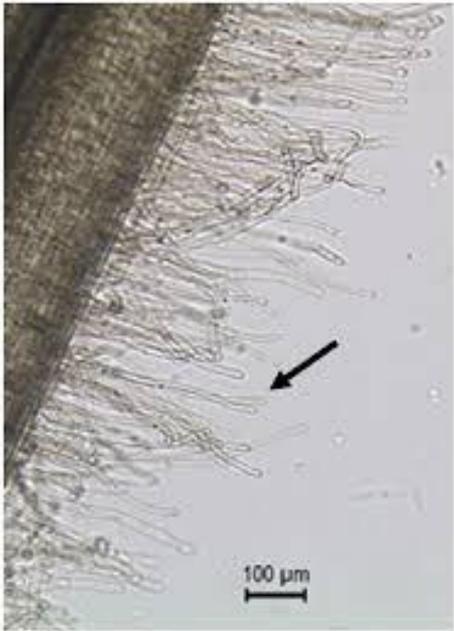
Symptoms?:



JoAnn M. Cruse



C. Warfield



How can 'water' affect Plant health?

Too little

Root dysfunction

Symptoms?:

wilt

nutritional deficiency

root hair death

decreased resistance to pathogens
and insects

How can 'water' affect Plant health?

Irregular watering/water supply...

What are the issues?



ot good

Ca deficiency

Reduce Relative Humidity

High RH also favors blossom end rot (Ca deficiency)



Rhizoctonia root/stem rot



How can 'water' affect Plant health?

Irregular water supply...

Nutritional issues...

Symptoms: ?

Calcium deficiency

Rhizoctonia root/stem rot

Bolting

How can 'water' affect Plant health?

Water splashing...

What are the issues?

How can 'water' affect Plant health?

Water splashing...

Bacterial diseases easily spread

Wet leaf surfaces – disease development
fungal spores germinate in free moisture



Bacterial leaf spot on columbine

How can 'water' affect Plant health?

When you water...?

How can 'water' affect plant health?

When you water...?

Watering late in the day allows leaves to remain wet through evening & increases relative humidity...favors disease development

How can 'water' affect Plant health?

Around the greenhouse...

Sanitation issues...

?

Look under the benches!





Shore fly breeding ground!



How can 'water' affect Plant health?

Around the greenhouse...

Sanitation issues...

?

Algae

disease vectors

(shore flies, fungus gnats)

Cultural Components of GH IPM

Prevention

- Sanitation
- Humidity control
- Scouting & Diagnosis / ID
- pH & nutrient testing
- Watering

Questions?



University of New Hampshire
Cooperative Extension