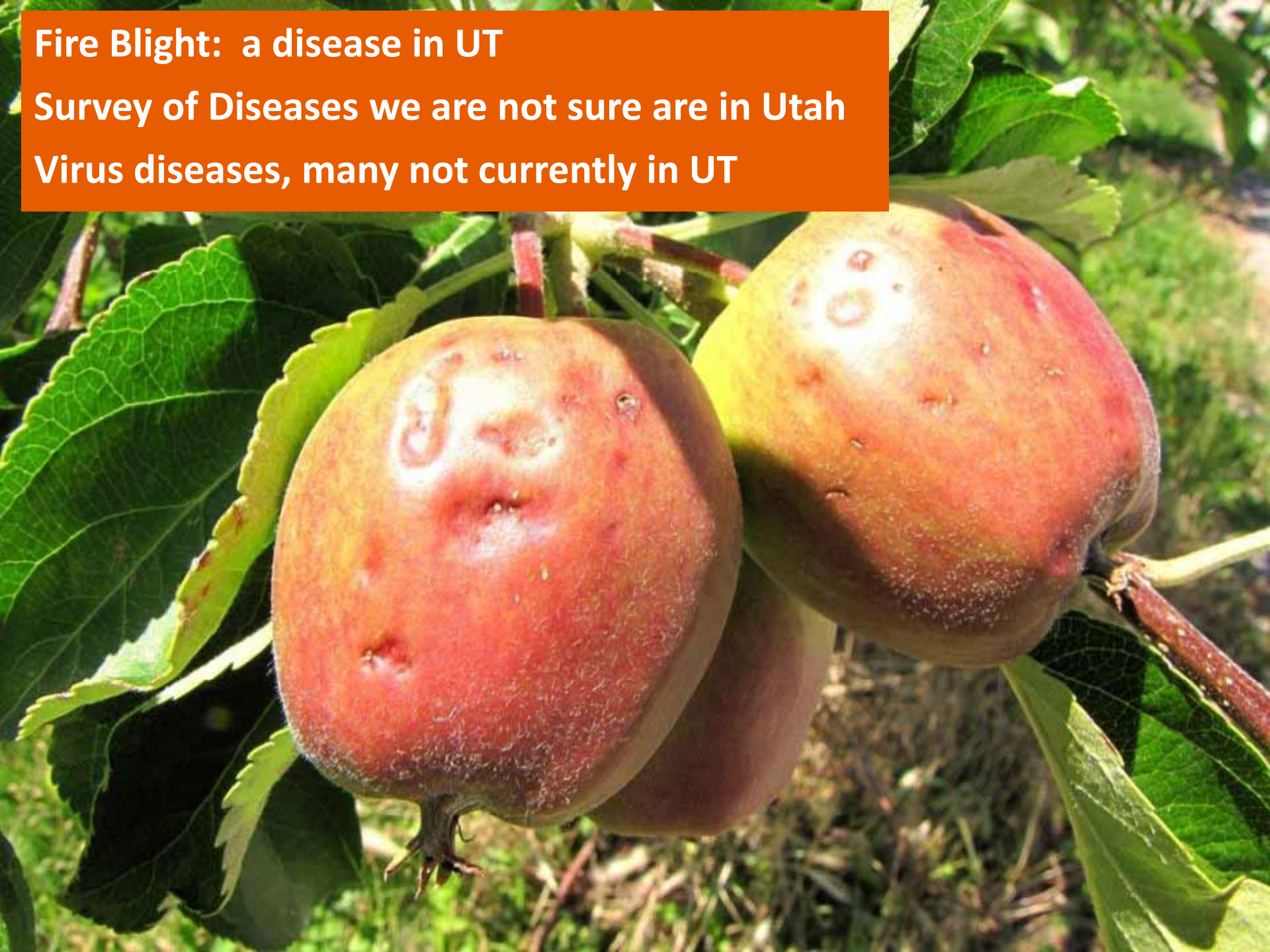
DISEASES OF TREE FRUIT: UPDATES

Marion Murray

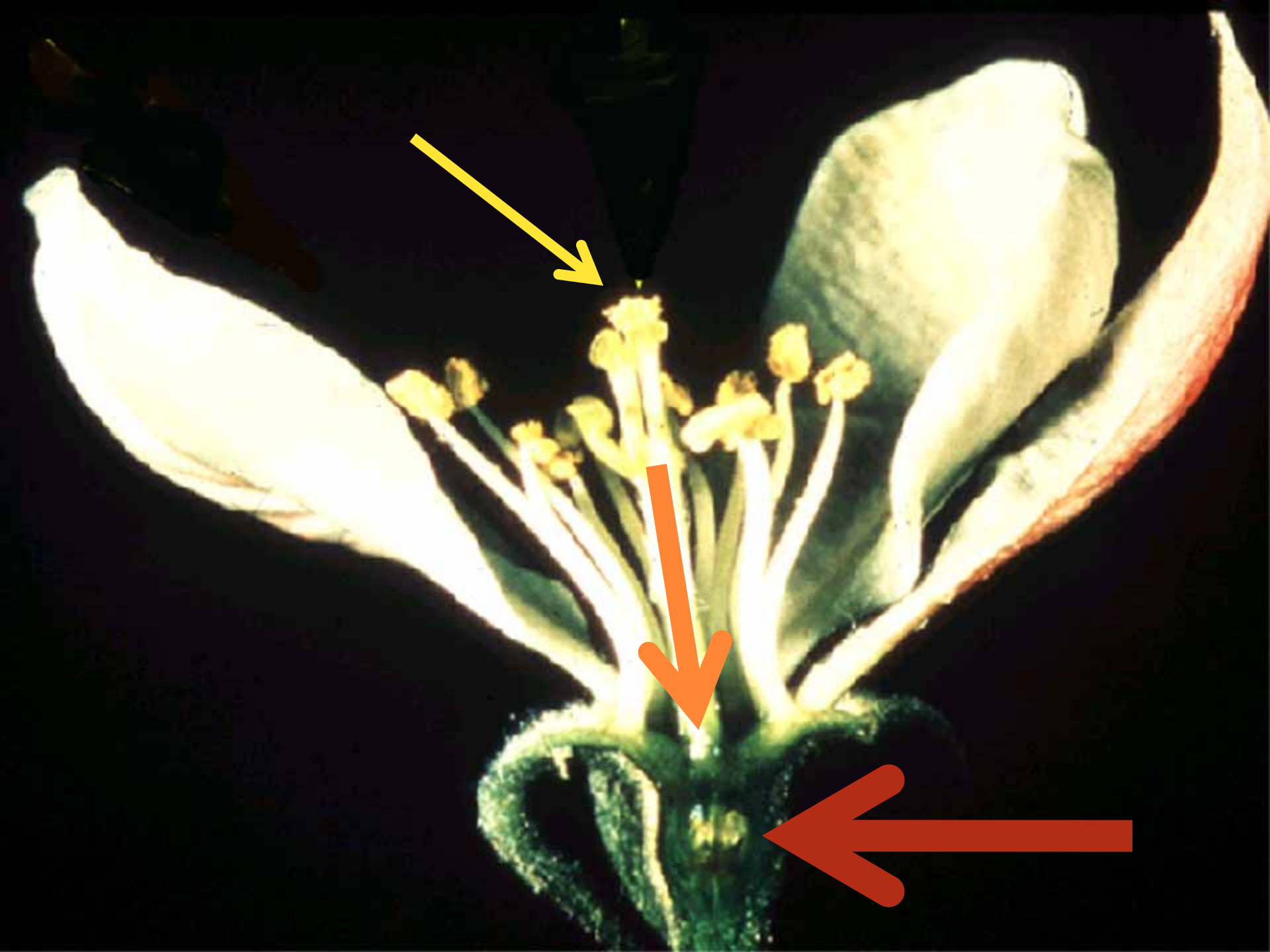
	APPLE	PEAR	PEACH	CHERRY
NY	48	48	21	24
PNW	24	19	22	24
Utah	11	8	10	9

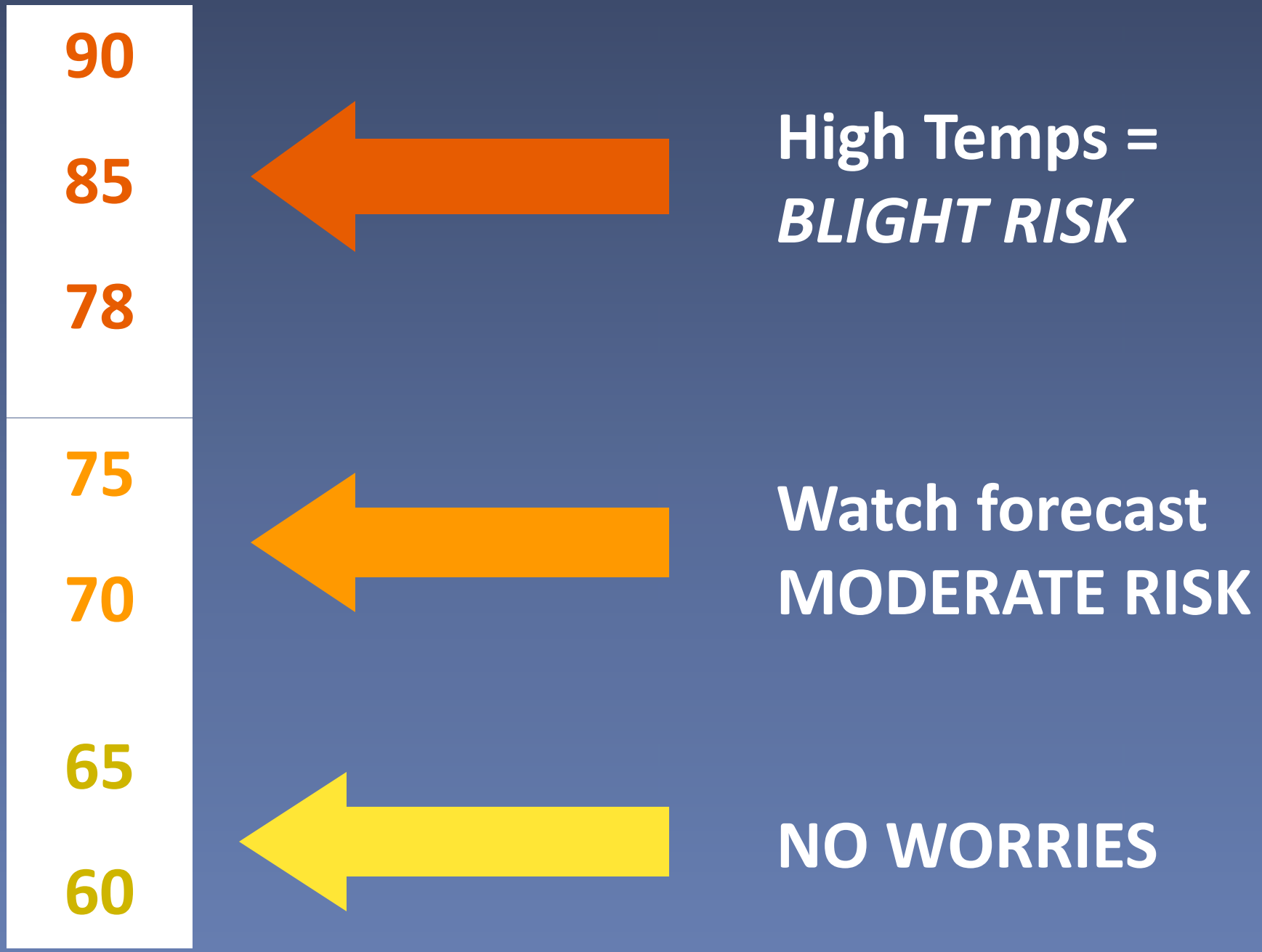


Fire Blight: a disease in UT

Survey of Diseases we are not sure are in Utah

Virus diseases, many not currently in UT




90
85
78
75
70
65
60
High Temps =
BLIGHT RISK
Watch forecast
MODERATE RISK
NO WORRIES

FB Model - Cougarblight

- stigma tips viable for 4 days
- “degree hours” are calculated over 4-day period
- must know:
  - are trees in bloom
    - WATCH for “secondary” bloom
  - was fire blight present last year and where
- is there moisture?
  - 0.01 inches (minimum)
  - 2 hours wetting (minimum)

climate.usu.edu

Utah TRAPs (Timing Resource and Alert for Pests)

Utah TRAPs is a degree-day calculator, insect phenology, and management tool for agriculture and landscape locations in northern Utah. The Utah TRAPs Web site is evolving, and more locations and pests will be added in the future.

Using degree days and insect phenology is a key feature of Integrated Pest Management. (Click here For USU Fact Sheet on degree days.) Degree days predict an insect's emergence or life stage, and provides the optimal treatment timing. Note that degree days and insect development information provided in the TRAPs tool pertains to Utah pest only. Several pest models (peach twig borer, codling moth, and western cherry fruit fly) have been validated for Utah, and others are currently being tested. See help file for instructions on using Utah TRAPs. Please email Marion Murray (marion.murray@usu.edu) for comments, feedback, or questions of this new service.

Pest

Station: Perry

Pest: Select pest

- Select pest
- Codling Moth(T)
- Fire Blight
- GDD (base 50)
- Greater Peachtree Borer
- Peach Twig Borer(T)
- San Jose Scale(T)
- Western Cherry Fruit Fly

UTAH PESTS

Utah Traps is a collaboration of the USU Extension IPM program, **Utah Pests**, and the USU Climate Center.

Connect

- Home
- Climate DataSets
- Visualize Weather & Climate
- Plant Management Tools
- Water Rangers (CoCoRaHS UT)
- Climate Conversions
- Climate Reports

Currently in Logan, UT
Change Location

Recorded: Feb 21, 2010 11:51 am

Temperature:	21.2° F (-6.0° C)
Feels Like:	13.6° F (-10.2° C)
Wind:	NNW at 5 Kts
Pressure:	29.9" (1013 mb)
Visibility:	10 sm
Dewpoint:	10.4° F (-12.0° C)
Rel. Humidity:	62.91%
Precip. Today:	0" (0 mm)
Feb. Precip:	0.36" (9.14 mm)

February 21, Record

High Temp:	1977 : 57°F
Low Temp:	1973 : -6°F
Daily Precip:	1993 : 0.37"

February 21, Normal

High Temp:	39.9°F
Low Temp:	19.0°F
Monthly Precip:	1.38"

Exposure Time Before Frostbite:

> 30 Minutes

Current Moon Phase:

Go to Station Feed

Search

Related Links

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Pest

Station: Perry

Pest: Fire Blight

Biofix Date: 05-01-2009

End Date: 05-10-2009

Submit

U T A H
PESTS

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Related Links

Utah TRAPs Search Results

Perry: Fire Blight (05-01-2009 - 05-10-2009)

Check your orchard for flowers, including the secondary flowers that develop in May on apples, or into June on pears. If there are no flowers, this model does not apply.

Select your Blight history: Fire Blight occurred last year in surrounding orchards

- No Fire Blight in your orchard or surrounding ordhards
- Fire Blight occurred last year in surrounding orchards
- Fire Blight is active within your orchard

Date	Degree Hours	4 Day Accum Degree Hours	Min °F	Max °F	Blight Potential	(info)
05/05/2009	49.78	49.78	52	71	LOW	
05/06/2009	72.27	122.05	47	72	LOW	
05/07/2009	11.93	133.98	47	66	LOW	
05/08/2009	0	133.98	37	58	LOW	
05/09/2009	5.26	89.46	36	63	LOW	
05/10/2009	21.98	39.17	38	66	LOW	
05/11/2009	104.09	131.33	41	73	LOW	
05/12/2009	37.04	168.37	46	69	CAUTION	
05/13/2009	0	163.11	36	58	CAUTION	
05/14/2009	28.3	169.43	44	69	CAUTION	

* Missing data from USU weather station replaced by nearest cooperator site

Check your orchard for flowers, including the secondary flowers that develop in May on apples, or into June on pears. If there are no flowers, this model does not apply.

"Wetting of flowers" includes rain, 2+ hours of dew, or a light irrigation.

Blight Potential	Management Actions
LOW	Wetting of flowers has not led to new flower blight infections in past years.
CAUTION	Wetting at this point is not likely to lead to infection, except within a few yards of an actively oozing canker. Continue to closely monitor the fire blight forecast, and consider applying biological sprays to reduce the potential build-up of blight bacteria if High risk is forecast in three or four days.
HIGH	If unprotected flowers are wetted, infection is possible. If flowers are numerous, you may choose to protect every 2 - 3 days with biological product during the high risk period. Or, apply antibiotic within 24 hours before or after the infection (wetting) event.
EXTREME	Outbreak may occur if blossoms are wetted, no matter the blight history of your orchard. Apply antibiotic within 24 hours before or after the wetting event. Biological products should already be present on flowers and may not work as well if only applied at this risk period.

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Currently in Logan, UT
Change Location

Recorded: Feb 27, 2010 9:51 am

Temperature:	26.6° F (-3.0° C)
Feels Like:	26.6° F (-3.0° C)
Wind:	Calm
Pressure:	29.88" (1012 mb)
Visibility:	3 sm
Dewpoint:	24.8° F (-4.0° C)
Rel. Humidity:	92.91%
Precip. Today:	0" (0 mm)
Feb. Precip:	0.43" (10.92 mm)

February 27, Record

High Temp:	1986 : 61°F
Low Temp:	1962 : -8°F
Daily Precip:	2004 : 1.29"

February 27, Normal

High Temp:	42.2°F
Low Temp:	20.8°F
Monthly Precip:	1.36"

Exposure Time Before Frostbite:

> 30 Minutes

Current Moon Phase:

Go to Station Feed

Search

Related Links

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Select your Blight history: Fire Blight is active within your orchard

History:

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Change Location

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Temperature:	28.4° F (-2.0° C)
Feels Like:	28.4° F (-2.0° C)
Wind:	Calm
Pressure:	29.85" (1011 mb)

February 27, Record

High Temp:	1986 : 61°F
Low Temp:	1962 : -8°F
Daily Precip:	2004 : 1.29"

February 27, Normal

High Temp:	42.2°F
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> 30 Minutes

Current Moon Phase:

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Related Links

FB Management

- Prune out cankers in winter (6-8 inches beyond)
- Copper
  - apply at ¼-inch green stage
- *Biologicals*
- Antibiotics
- *Apogee*
- Summer pruning
  - if severe – wait and prune in winter
  - light – cut 12” beyond
    - don’t need to disinfect tools
    - can drop on ground in hot dry weather (don’t need to burn)

Biologicals

Bloomtime, Blightban, Serenade, Blossom Protect

- ineffective alone
- must be applied before infection
- apply at 30-40% open flowers once on cool day
- use high water volume
- must wait at least 2 days before antibiotic application

Antibiotics

- Streptomycin (Agri-Mycin, Ferti-Lome FB Spray)
  - slight systemic activity
- Oxytetracycline (Mycoshield, FlameOut)
  - not systemic
  - does not KILL bacteria, but slows it down
  - works best when on plants before infection (up to 24 hours before wetting)

Stone Fruit Disease Survey

- bacterial canker (*Pseudomonas syringae*)
- cytospora canker
- brown rot

Survey

- sample selected orchards throughout the season
- sample large batches of fruit at harvest
- distribute a flier to ag agents in fruit producing counties describing diseases and to watch for symptoms
  - send samples to Marion, or
  - record location for site visit

Brown Rot

- *Monilinia fructicola*
- All stone fruits susceptible
- Favored by humid weather at the time that fruit are ripening
- Entire crop can be lost within a few days
- Disease can develop on harvested fruit


©Bruce Watt

Virus – General Symptoms

- Foliar discoloration or deformity
- Fruit deformation
- Change in growth habit
- Change in maturity timeline
- Lack of vigor; decline

Plum Pox Virus

- affects all stone fruit
- 100 million trees infected in Europe
- affected trees must be removed
- vectored by aphids
- carried long distance via spread of infected nursery stock

- introduced into PA in 1999
- also found in Nova Scotia and Ontario, Canada
- in 2006, found in NY on peach and plum and in MI


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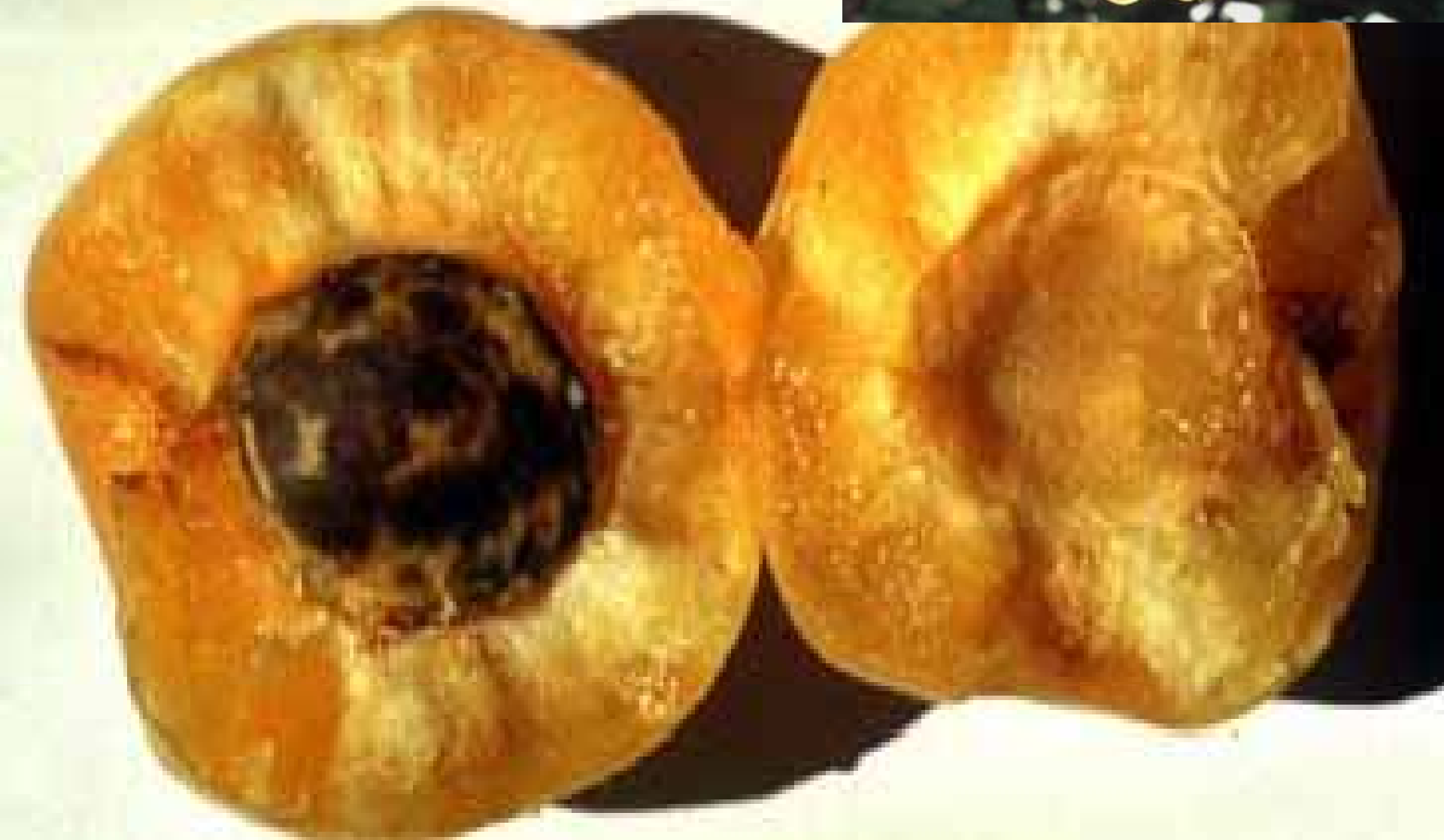



M. Nemeth, PHSCS,

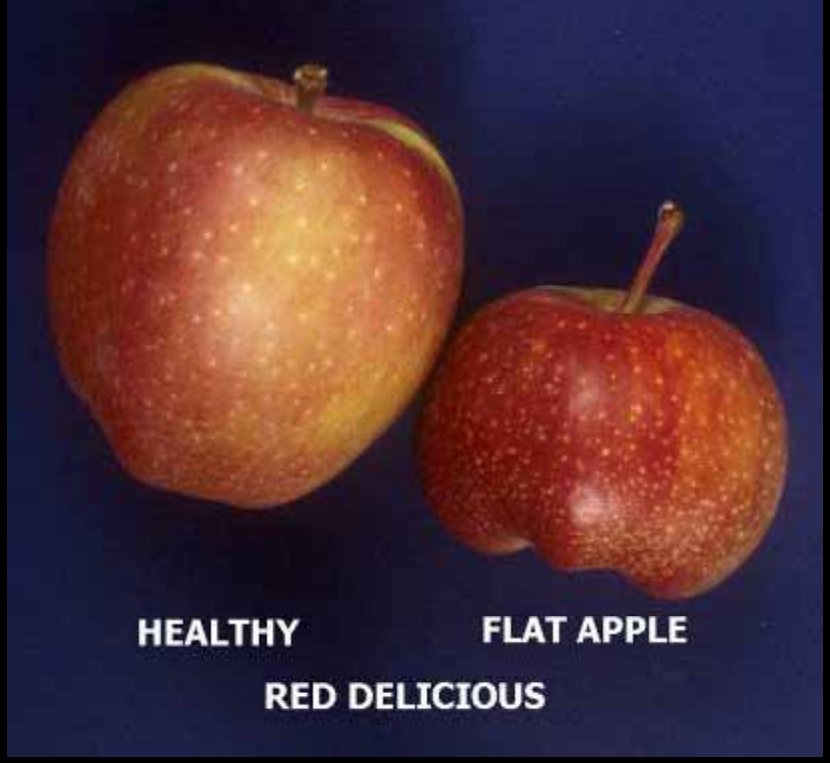

CS, Hungary


M. Nemeth, PHSCS, Hungary

Cherry Rasp Leaf Virus

- occurs in most western states
- sweet cherry, peach, and apple
- distributed by grafting and by dagger nematodes
- survives on alternate weed hosts (dandelion)

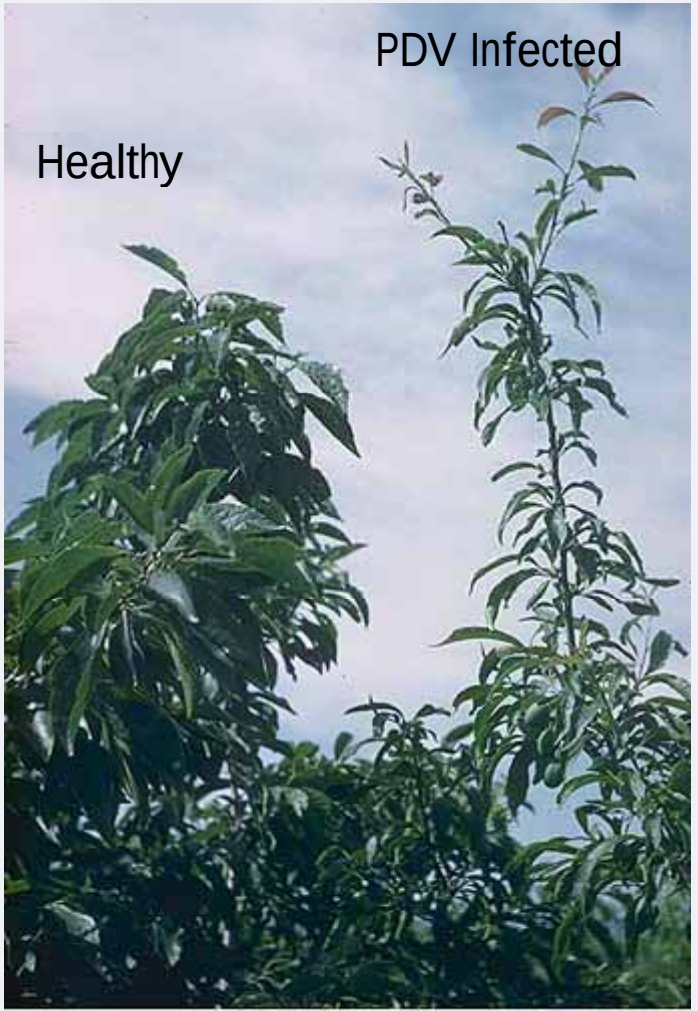
- projections on undersides of leaves
- poor bud survival and tree growth
- tree eventually weakens and dies


HEALTHY
FLAT APPLE
RED DELICIOUS

Other Viruses

Prunus Necrotic Ringspot Virus

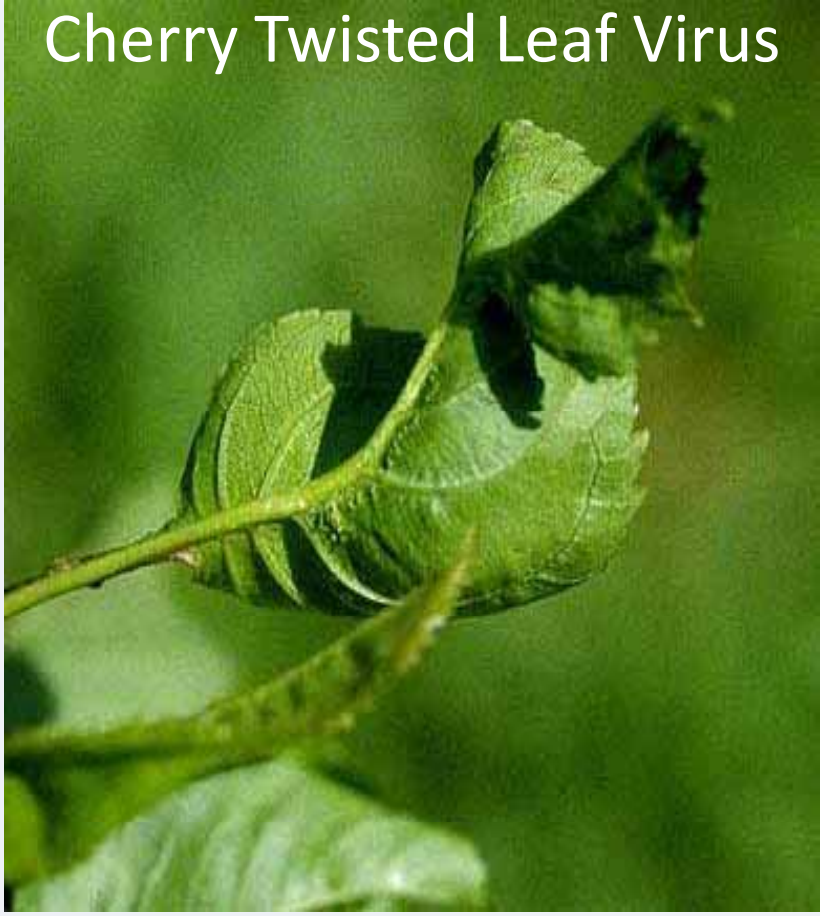
Prune Dwarf Virus



Cherry Leaf Roll Virus

Cherry Mottle Leaf Virus

Cherry Twisted Leaf Virus



X-Disease