# *Cherry Pests and Diseases*

# *Rest Breaking Treatments for Sweet Cherries*

*Joe Grant*
Farm Advisor
UC Cooperative Extension
San Joaquin County

*National Cherry Growers of Australia*
*Annual Conference*
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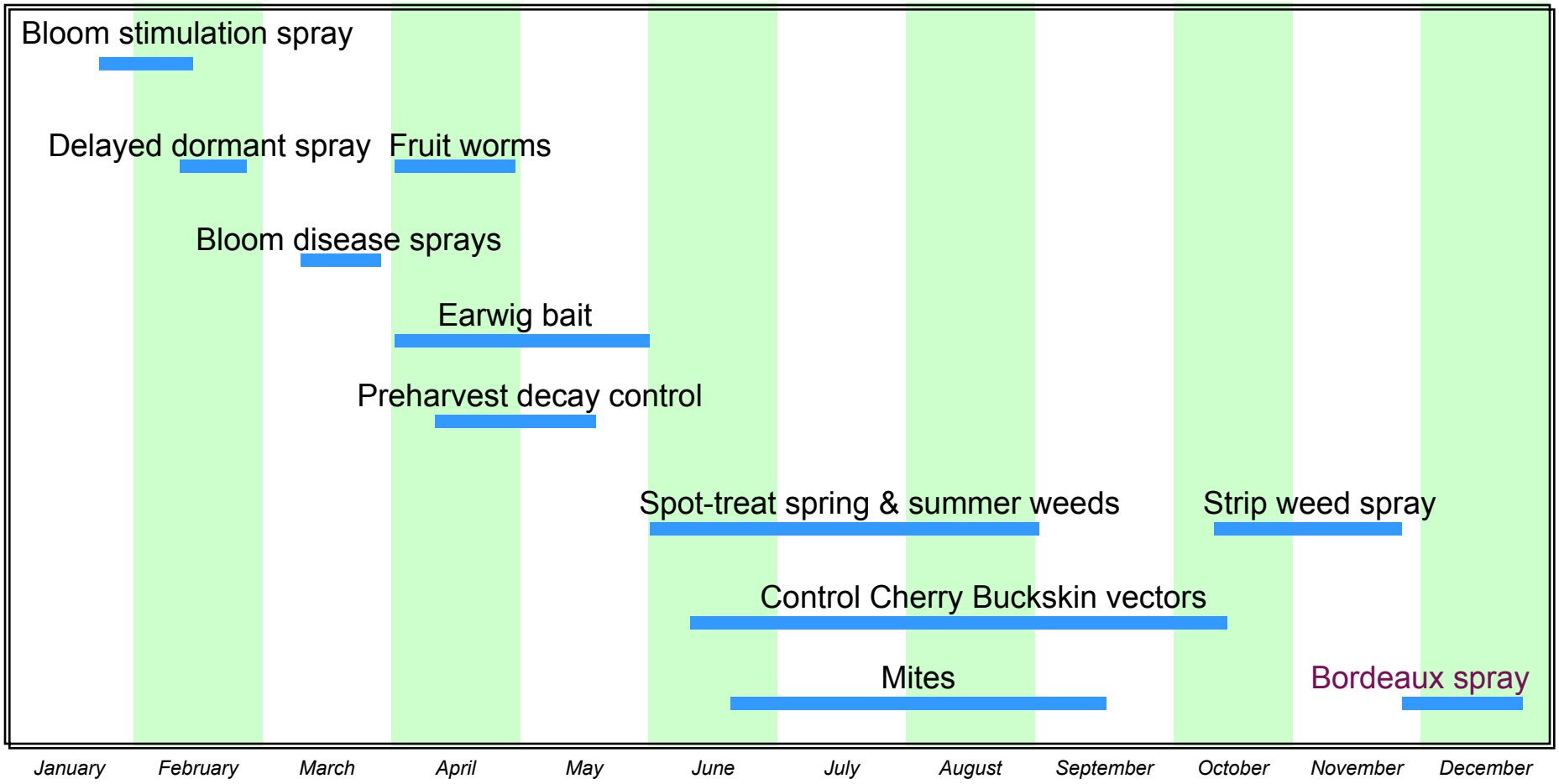
# CHERRY PEST MANAGEMENT CALENDAR OF OPERATIONS

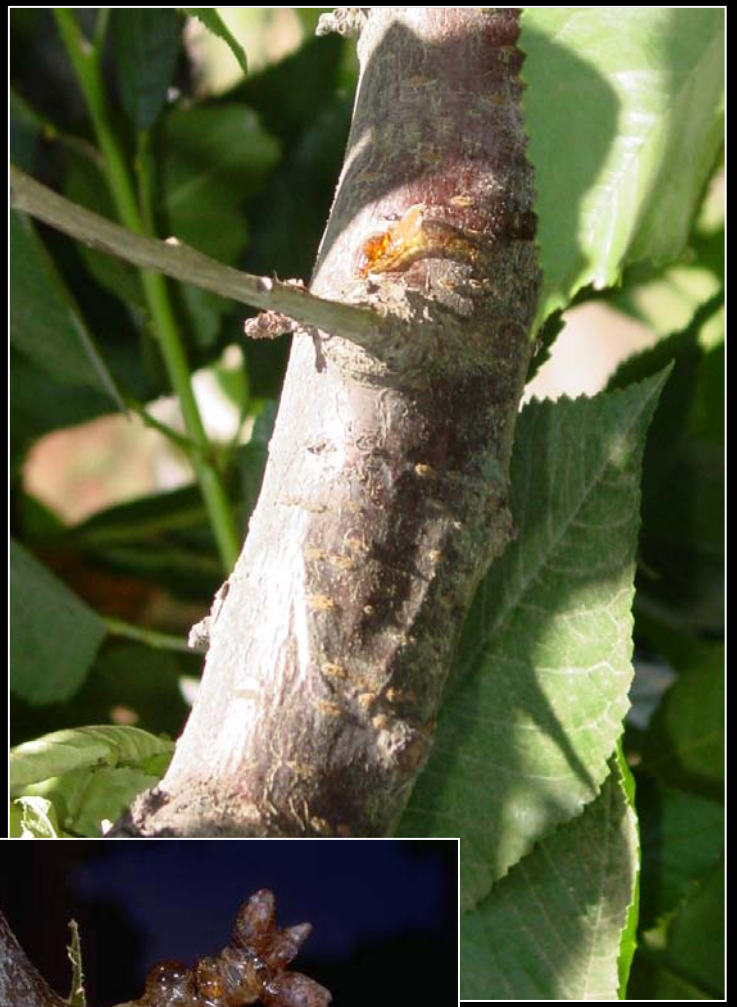
Joe Grant, UC Farm Advisor, San Joaquin County




This calendar lists typical timings of practices conducted in a sweet cherry orchard. Specific needs will determine if the practice is necessary.

# Pocket gophers

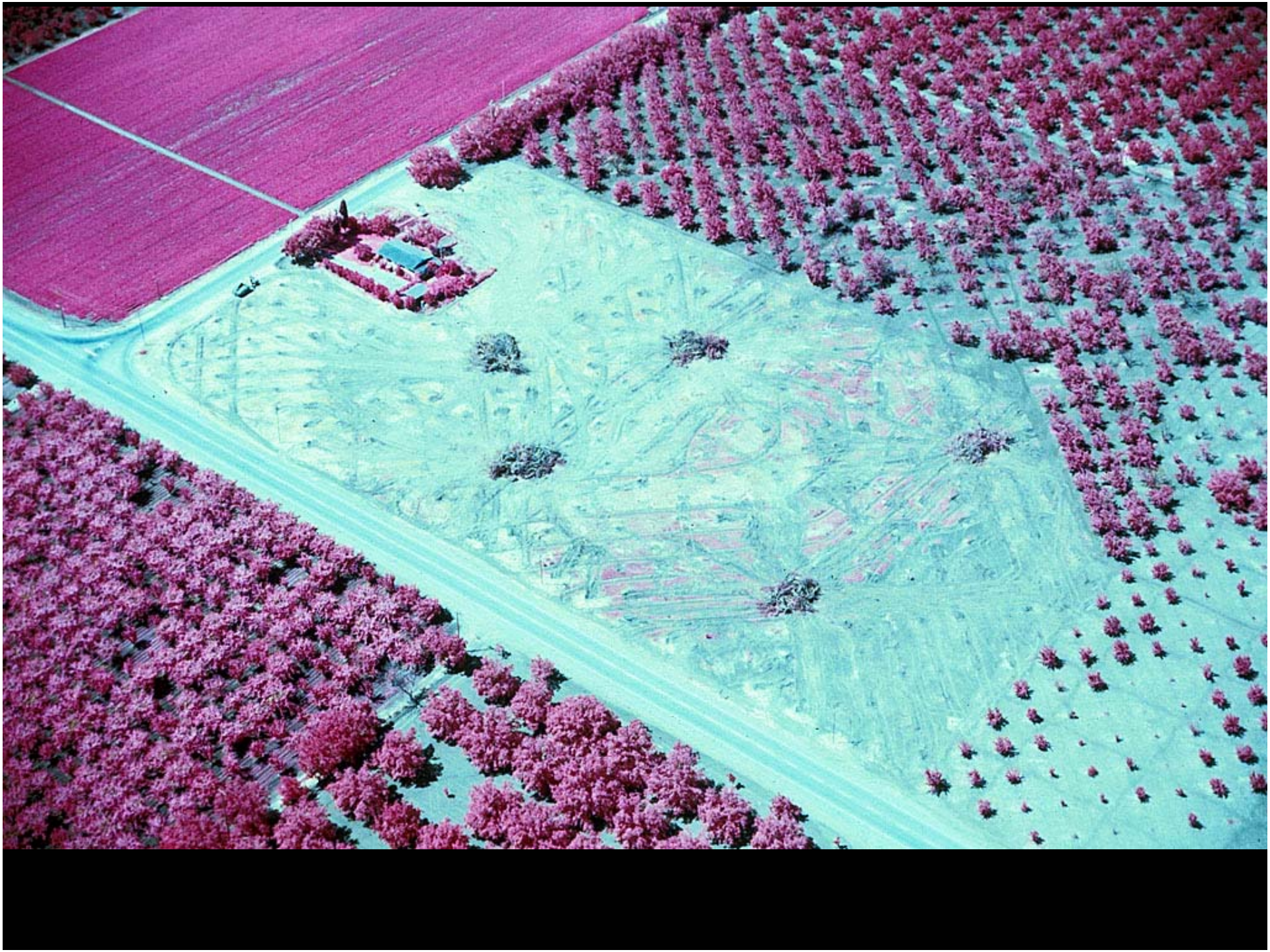
# Bacterial canker & blossom blast

Phytophthora root & crown rot


Cherry Buckskin Disease (Western X Disease)
High-worked Mahaleb tree


1um




WARNING
NON-REG. CHEMICAL


Mountain Leafhopper
Cherry (Flor's) Leafhopper


Cherry Stem Pitting Disease

# Blossom & fruit rots

*Brown rot blossom blight and fruit rot*

*Botrytis blossom blight*

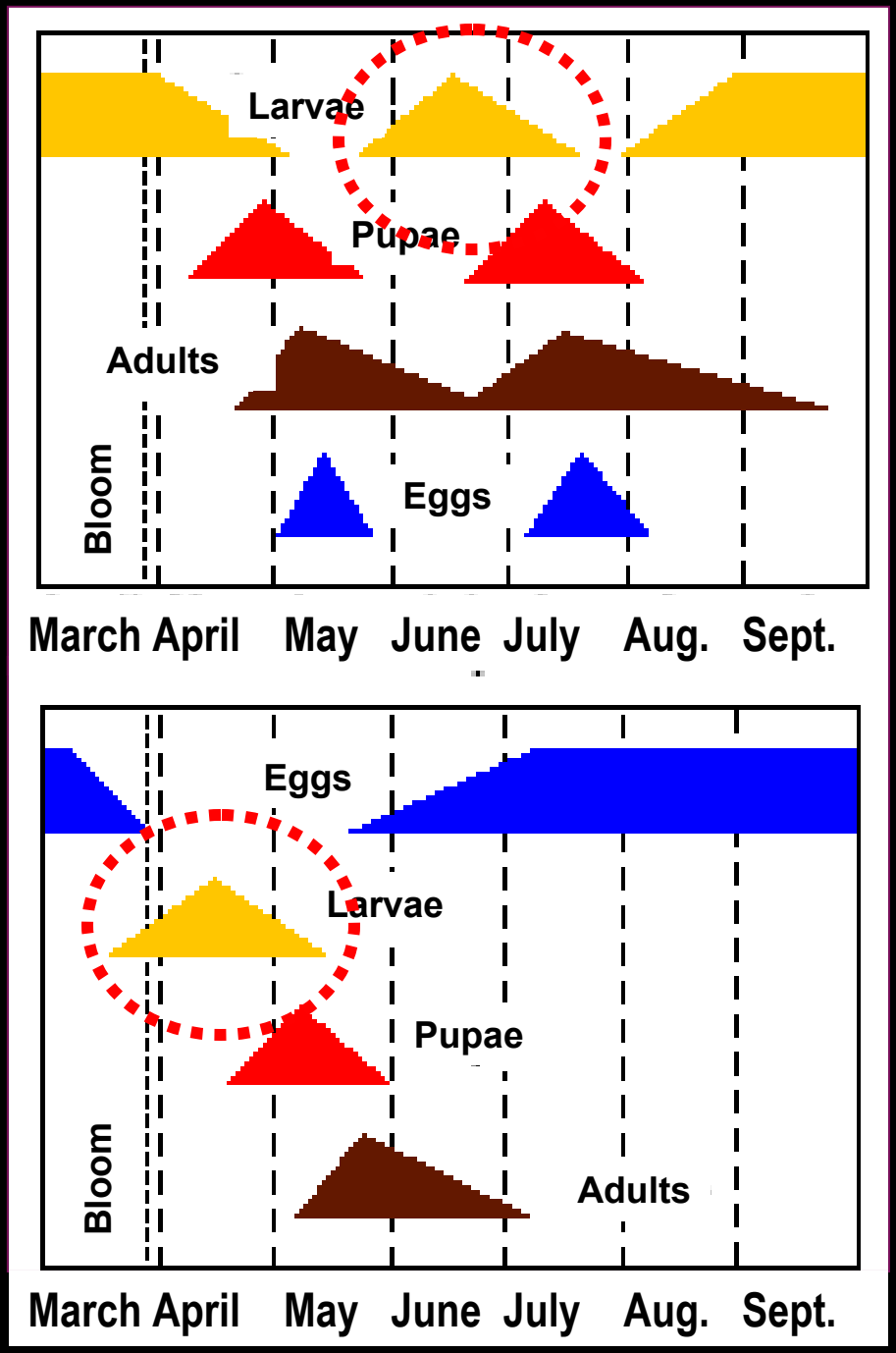
*Rhizopus fruit rot*

Powdery Mildew, *Podosphera clandestina*

Green Fruitworm, *Orthosia hibisci*

# Fruittree Leafroller larvae & adult


# Obliquebanded Leafroller larvae & adult




## Obliquebanded leafroller

## Fruittree leafroller


Webspinning spider mites

# Occasional Pests

Cherry slug

Scales


European Earwig

Birds

Wood borers

- Cherry Viruses
  - Prunus Necrotic Ringspot Virus
  - Cherry Raspleaf
  - Cherry Necrotic Rusty Mottle Virus
- Nematodes
  - Lesion Nematode (*P. vulnus*)
  - Ring Nematode

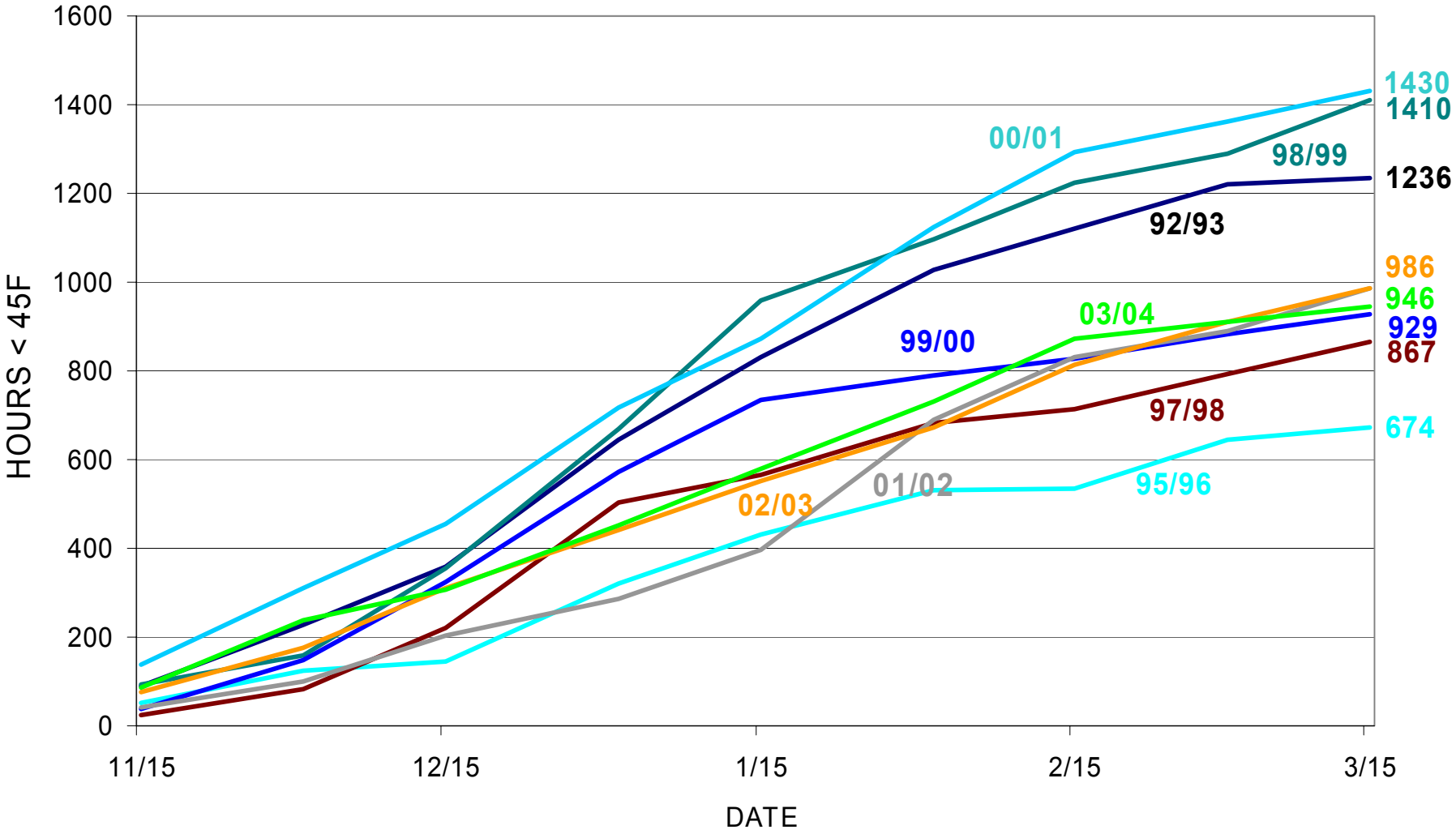
# Abiotic Disorders


# *Rest Breaking Treatments for Sweet Cherries*

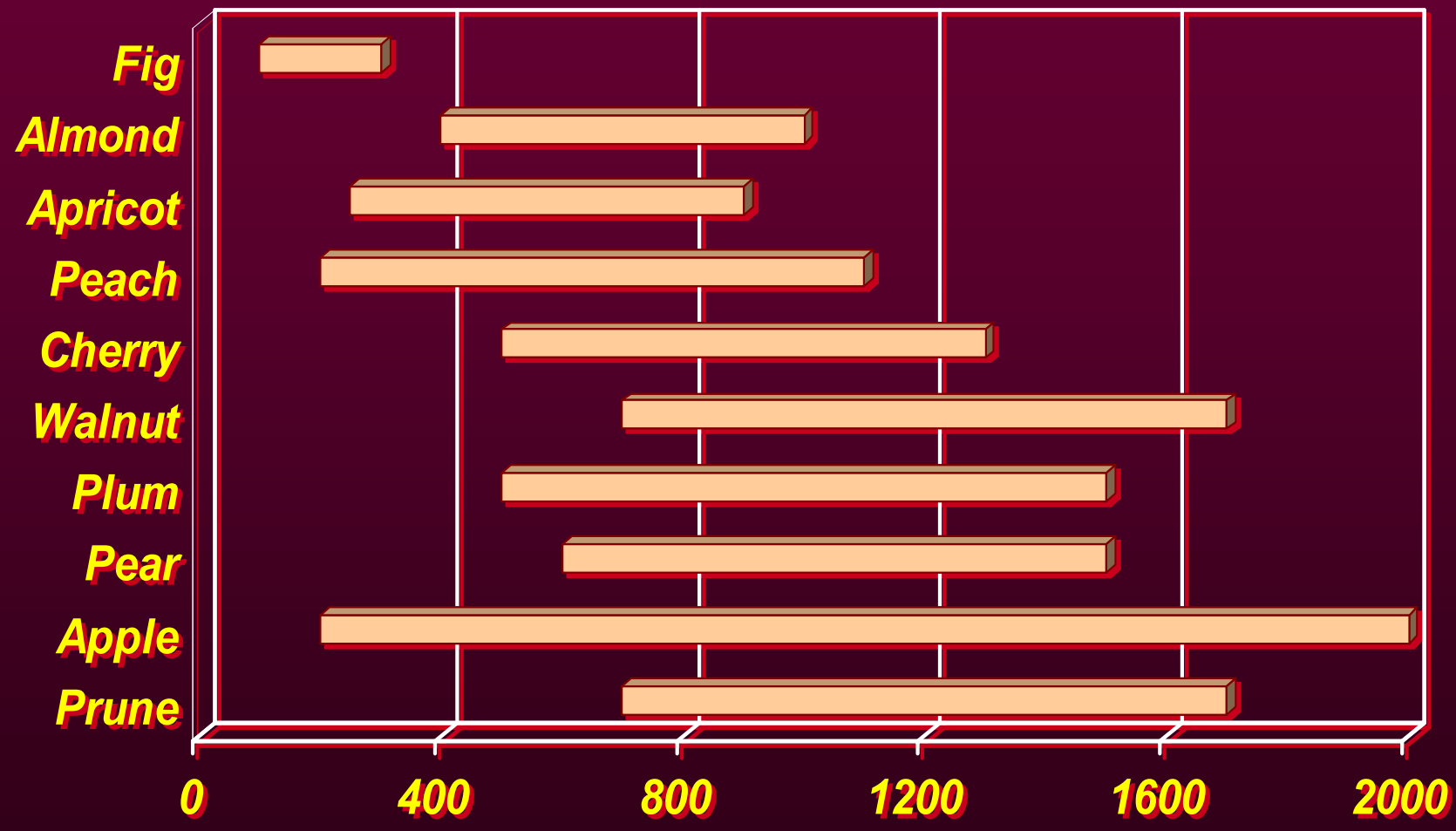
# *Dormancy/Rest*

- *Lack of chilling causes*
  - *Straggly leafing & bloom*
  - *Weak bloom, abnormal flowers*
  - *Bud death*
  - *Uneven fruit growth & maturity*

# Average Chilling Accumulation
## Avg. of available San Joaquin County stations



# *Approximate Chilling Requirements of Selected Fruit & Nut Crops*



# *Chilling requirement*

- ✓ *Varies:*
  - *Crop*
  - *Variety*
  - *Rootstock*
  - *Among buds on a tree*
- ✓ *California cherries: 850 hrs.*

# *Stages of dormancy*

*Summer* *Fall* *Winter* *Spring*

*Paradormancy* *Endodormancy* *Ecodormancy*

***Environmental changes***

***Short days***
***Low temperatures***

***Warm temperatures***

***Biological changes***

***Hormones from terminal buds & leaves***

***Dehydrins***
***Bound water***
***Membrane changes***
***Low metabolism***

***Hormones***
***Free water***

# *Chilling Models*

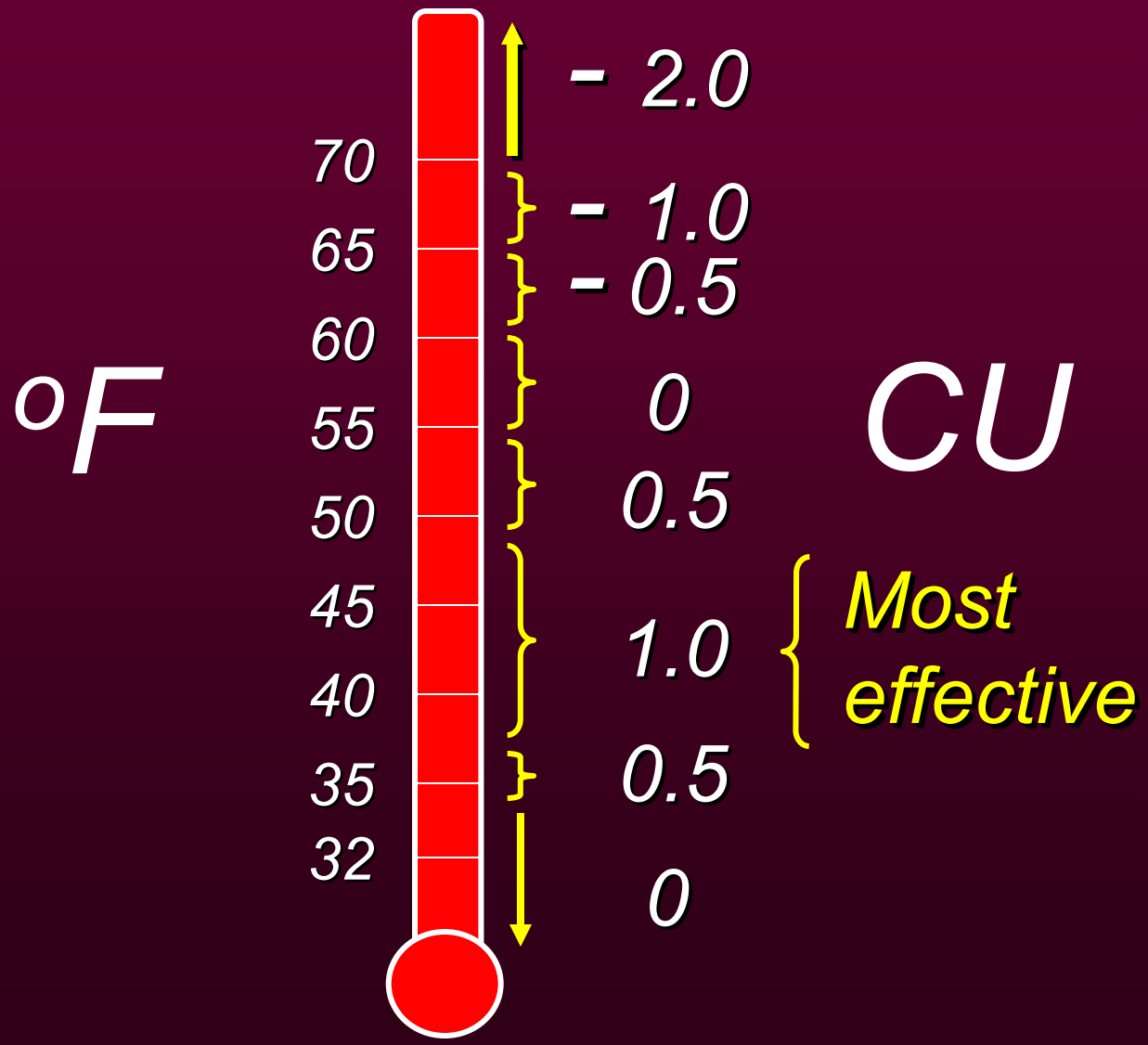
- ✓ *Hours ≤ 45 °F*
- ✓ *“Utah” Chill Units*
- ✓ *Dynamic Model*

# *Chilling Models*

- ✓ *Hours ≤ 45 °F (7 °C)*
  - *Less than 45 °F (1934)*
  - *Less than or equal to 45 °F (1950)*

# "Utah" Chill Units Model,

Richardson, *et al*, 1974



# *Dynamic Model*

Fishman, *et al, 1987*

# *Rest breaking materials*

- ✓ *Oil*
- ✓ *DORMEX®*
- ✓ *CAN 17 + Surfactant*
- ✓ *Calcium nitrate + Erger G®*

# *Rest breaking treatments*

- ✓ *Response variable, depending on:*
  - *Dose*
  - *Time of application*
  - *Conditions at/after application*
  - *Bud development*
  - *Extent of chilling deficit*

# *Rest breaking treatments*

- ✓ *DORMEX®* generally more effective than CAN 17
- ✓ More consistent response when time sprays using CP
  - Dormex: 42-50 CP
  - CAN 17: 54-58 CP
- ✓ Easier to compact than advance bloom
- ✓ Effect on fruit ripening less than bloom
- ✓ Surfactants vary in effectiveness and risk of phytotoxicity

# CAN 17 + 2% Entry

Bing, 2004

*CAN 17 + Entry*


*Dormex + Agri-dex*


*Bing, G & S, 2004 50 CP*


MAR 22 2004