Cherry Pests and Diseases

Rest Breaking Treatments for Sweet Cherries

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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
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, *Podosphaera 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

Suture, doubles, spurs

Cherry crinkle
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

HOURS < 45F

DATE

0 200 400 600 800 1000 1200 1400 1600

11/15 12/15 1/15 2/15 3/15

95/96 97/98 98/99 99/00 00/01 01/02 02/03 03/04
Approximate Chilling Requirements of Selected Fruit & Nut Crops

- Fig
- Almond
- Apricot
- Peach
- Cherry
- Walnut
- Plum
- Pear
- Apple
- Prune

Hours < 45 °F
Chilling requirement

- Varies:
  - Crop
  - Variety
  - Rootstock
  - Among buds on a tree

- California cherries: 850 hrs.
Stages of dormancy

- **Summer**: Paradormancy
- **Fall**: Endodormancy
- **Winter**: Ecodormancy
- **Spring**: Paradormancy

**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 $\leq 45 \, ^\circ F$
✓ “Utah” Chill Units
✓ Dynamic Model
Chilling Models

✓ Hours $\leq 45 \, ^\circ F (7 \, ^\circ C)$
  - Less than 45 °F (1934)
  - Less than or equal to 45 °F (1950)
“Utah” Chill Units Model,
Richardson, et al, 1974

°F

CU

Most effective

- 2.0
- 1.0
- 0.5
0
0.5
1.0
0.5
0
Dynamic Model
Fishman, et al, 1987

Heat
Cold

“Chilling Portion”
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