

# SWAT - Annual calendar of vineyard events: Draft 11/05/17

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## 1) January

- a) Vineyard stage
  - i) Dormant
- b) Vineyard activities
  - i) Initial pruning
    - (1) Fungal disease cut-back
  - ii) Tying
  - iii) Trellis Repair
  - iv) Manual or chemical weed control
- c) Irrigation
  - i) Repairs
  - ii) Sodic soil flush after senescence
  - iii) Only irrigate if root zone dries
- d) IPM
  - i) Monitor / Treat argentine ants
  - ii) Pull PD other diseased / dead vines
- e) SWAT
  - i) Vineyard finances meeting
  - ii) Soil Flush
- f) Other

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### **2) February**

- a) Vineyard stage
  - i) Dormant
- b) Vineyard activities
  - i) Final Pruning of early varieties (Tears of joy no crying)
  - ii) Tying
  - iii) Broadcast and banding fertilizers
  - iv) Manual or Chemical weed control
- c) Irrigation
  - i) Only irrigate if root zone dries
- d) IPM
  - i) Monitor / Treat Argentine ants
  - ii) Mealy Bug pheromone traps every 2 weeks
  - iii) GWSS traps check every 2 weeks
  - iv) Pre-bud break fungicide if needed – always in areas prone to Eutypa immediately after final prune
  - v) Gopher control traps or bait
  - vi) Branch and Twig Borer examine during final prune Remove infected dead wood
- e) SWAT
  - i) Pruning class
  - ii) Mealy bug and GWSS monitoring class
    - (1) Trap count app or website for data collection
- f) Other
  - i) Order beneficial insects through co-op

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### 3) March

- a) Vineyard stage
  - i) Dormant / Bud break
  - ii) Frost danger
- b) Vineyard activities
  - i) Final Pruning (Tears of joy no crying)
  - ii) Tying
  - iii) Broadcast and banding fertilizers
  - iv) Manual or chemical weed control
- c) Irrigation
  - i) 100% ETO after 70% PAW
  - ii) Install water sensors
- d) IPM
  - i) Monitor / Treat argentine ants
  - ii) Mealy Bug pheromone traps every 2 weeks
  - iii) GWSS Traps
  - iv) Gopher control (Barn owls & Kestrels lay eggs) /Traps
  - v) Ground Squirrel feeding stations
  - vi) Branch and Twig Borer examine during final prune Remove infected dead wood
  - vii) Powdery Mildew - Fungicides - Oils and sulfurs can be used
    - (1) PM Index
- e) SWAT
  - i) Irrigation
    - (1) Water sensors
    - (2) Deficit irrigation theory and practice
- f) Other
  - i) TVWGA Grape Days

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### 4) April

- a) Vineyard stage
  - i) Bud break
  - ii) Rapid shoot growth early varieties
  - iii) Frost danger - Last frost April 15 in Temecula
- b) Vineyard activities
  - i) Pruning Final (Tears of joy no crying)
  - ii) Suckering, shoot thinning
  - iii) Broadcast and banding fertilizers
  - iv) Manual or Chemical weed control
  - v) Fruit set fertigation / Foliar feed
    - (1) N (NH<sub>4</sub> and amines, <5 units), Boron, Copper, Zinc, Molybdenum, Iron
  - vi) Petiole Tests pre fruit set
  - vii) Mow or cultivate – cultivation not recommended
- c) Irrigation
  - i) 100% ETO after 70% PAW
- d) IPM
  - i) Monitor / Treat Argentine ants
  - ii) Mealy Bug
    - (1) Mealy Bug pheromone traps every 2 weeks
    - (2) Pheromone disruptor
    - (3) Mealy bug destroyer, *Cryptolaemus montrouzieri*
  - iii) GWSS Traps
  - iv) Gopher control (Barn owls & Kestrels lay eggs rearing young) /Traps
  - v) Ground Squirrel feeding stations
  - vi) Fungicides - Oils and sulfurs can be used
    - (1) PM Index
- b) SWAT
  - i) Reading Petiole tests and Foliar feeding
  - ii) Monitoring and options for Powdery Mildew
- c) Other

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## 5) May

- a) Vineyard stage
  - i) Rapid Shoot growth
  - ii) Flowering
  - iii) Fruit set
- b) Vineyard activities
  - i) Suckering, shoot thinning
  - ii) First wire / tie shoots
  - iii) Petiole Tests post fruit set
  - iv) Fruit set fertigation / Foliar feed
    - (1) N (NH<sub>4</sub> and amines, <5 units), Boron, Copper, Zinc, Molybdenum, Iron
  - v) Potassium and Phosphorous fertigation / foliar if needed (No nitrogen)
  - vi) Mow or cultivate – cultivation not recommended
  - vii) Vineyard planting / Replanting
- c) Irrigation
  - i) 100% ETO or deficit
- d) IPM
  - i) Monitor / Treat argentine ants
  - ii) Mealy Bug
    - (1) Mealy Bug pheromone traps every 2 weeks
    - (2) Applaud usually early May sign of first crawlers
  - iii) GWSS
    - (1) Traps
    - (2) Imidacloprid full dose
  - iv) Gopher control (Barn owls & Kestrels rearing young) /Traps
  - v) Scout / treat Leaf Skeletonizer
  - vi) Powdery Mildew Fungicides (oils and sulfur only if below 90deg F for 24 hours)
    - (1) PM Index
  - vii) Botrytis and Sour rot Fungicides
- e) SWAT
  - i) Identifying and testing for fungal diseases
- f) Other

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### 6) June

- a) Vineyard stage
  - i) Rapid Shoot growth
  - ii) Verasion
  - iii) High heat danger
- b) Vineyard activities
  - i) Shoot thinning, Leaf thinning (Heat caution)
  - ii) Second wire / tie shoots
  - iii) Fruit drop
  - iv) Petiole Tests post fruit set - Potassium and Phosphorous
  - v) Nitrogen (light), Potassium and Phosphorous fertigation / foliar if needed
  - vi) Mow or cultivate – cultivation not recommended
  - vii) Vineyard planting / Replanting
- c) Irrigation
  - i) 100% ETO or deficit
- d) IPM
  - i) Mealy Bug
    - (1) Mealy Bug pheromone traps every 2 weeks
    - (2) First Movento application
  - ii) GWSS Traps
  - iii) Gopher control (Barn owls rearing young) / Traps
  - iv) Ground Squirrel feeding stations
  - v) Scout / treat Leaf Skeletonizer
  - vi) Ground Squirrel feeding stations
  - vii) Powdery Mildew Fungicides (oils and sulfur not recommended)
    - (1) PM Index
  - viii) Botrytis and Sour rot Fungicides
  - ix) Scout for Eutypa, & Esca symptom, send samples out for Culture & Microscopy
- e) SWAT
- f) Other

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## 7) July

- a) Vineyard stage
  - i) Verasion – Lag phase
  - ii) High heat danger
  - iii) Summer monsoon rain danger
    - (1) Sour rot
- b) Vineyard activities
  - i) Leaf thinning for ripening (Heat caution)
  - ii) Fruit thinning
  - iii) Nitrogen, Potassium and Phosphorous fertigation / foliar if needed
  - iv) Prepare for harvest
- c) Irrigation
  - i) 100% ETO or deficit
- d) IPM
  - i) Monitor / Treat argentine ants
    - (1) Scout / treat Leaf Skeletonizer
  - ii) Mealy Bug
    - (1) Mealy Bug pheromone traps every 2 weeks
    - (2) Second Movento application
  - iii) Gopher control (Barn owls & Kestrels first tuition payment due)
  - iv) Bird netting / falcons
  - v) Powdery Mildew Fungicides (oils and sulfur not recommended)
    - (1) PM Index
  - vi) Botrytis and Sour rot Fungicides
- e) SWAT
- f) Other
  - i) Large order vines for following year

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### **8) August**

- a) Vineyard stage
  - i) Harvest
  - ii) High heat danger
  - iii) Summer monsoon rain danger
    - (1) Sour rot
- b) Vineyard activities
  - i) Harvest
    - (1) Pre harvest fruit drop of damaged fruit
  - ii) Potassium and Phosphorous fertigation if needed for late harvest
  - iii) Leaf thinning for ripening (Heat caution)
  - iv)
- c) Irrigation
  - i) 100% ETO or deficit
  - ii) Post-Harvest Big Drink than 70% ETO big drink
- d) IPM
  - i) Monitor / Treat argentine ants
  - ii) Flag Mealy bug and other insect damage noticed during harvest
  - iii) Mealy Bug pheromone traps every 2 weeks
  - iv) GWSS Traps
  - v) Scout / treat Leaf Skeletonizer
  - vi) Ground Squirrel feeding stations
  - vii) Bird netting / falcons
- e) SWAT
- f) Other



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## 9) September

- a) Vineyard stage
  - i) Late harvest / Post-harvest / root set / Nutrient loading
  - ii) High heat danger
- b) Vineyard activities
  - i) Harvest
  - ii) Potassium and Phosphorous fertigation if needed
  - iii) Harvests
  - iv) Fall fertigation
  - v) Soil Teats
- c) Irrigation
  - i) Post-Harvest Big Drink than 70% ETO big drink
- d) IPM
  - i) Monitor / Treat argentine ants
  - ii) Scout Test for PD and Red Blotch
  - iii) Mealy Bug pheromone traps every 2 weeks
  - iv) GWSS Traps
- e) SWAT
- f) Other

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### 10) October

- a) Vineyard stage
  - i) Late harvest / Post-harvest / root set / Nutrient loading
- b) Vineyard activities
  - i) Final Harvests
  - ii) Fall fertigation
    - (1) N (fish) Seaweed micro nutrient blend, Available Ca
    - (2) K- Potassium (never with Ca)
  - iii) Weed control
  - iv) Vine count replacement count
- c) Irrigation
  - i) Post-Harvest Big Drink than 70% ETO big drink
- d) IPM
  - i) Monitor / Treat argentine ants
  - ii) Mealy Bug pheromone traps every 4 weeks
  - iii) GWSS Traps
  - iv) Scout for Pierced Disease (xf) and Red Blotch symptom, send samples out for PCR
- e) SWAT
- f) Other
  - i) Vine order replacements

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### 11) November

- a) Vineyard Stage
  - i) Post-harvest / root set / Nutrient loading
- b) Vineyard activities
  - i) Tying
  - ii) Broadcast fertilizers
    - (1) Balance Cation macronutrient Ca- Calcium, Mg- Magnesium(usually excess) , K- Potassium, P ( $P_2O_5$ ) Phosphate
    - (2) Anion macronutrient P ( $P_2O_5$ ) Phosphate (soft rock or organically bound), N
    - (3) Micronutrients, Boron, Copper, Zinc, Molybdenum, Iron + micro blend
  - iii) Compost
  - iv) Plant cover crops
  - v) Deep ripping wheel tracks
  - vi) Open low-lying air draining
- c) Irrigation
  - i) Flush / Acid / Winterize
- d) IPM
  - i) Monitor / Treat argentine ants
  - ii) Install Owl / Kestrel boxes
- e) Mealy Bug pheromone traps every 4 weeks
- f) SWAT
  - i) Year in review / upcoming CY plan
- g) Other
  - i) Vineyard Team sustainable viticulture conference – San Louis Osbisbo
  - ii) SoCal Farmers Summit – Encinitas CA

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### 12) December

- a) Vineyard stage
  - i) Dormant
- b) Vineyard activities
  - i) Initial pruning
    - (1) Fungal disease cut-back
  - ii) Drop wire
  - iii) Compost
- c) Irrigation
  - i) Major repairs
  - ii) Only irrigation if root zone dries
  - iii) Flush irrigation system (Acid if Calcium buildup)
  - iv) Winterize exposed parts
- d) IPM
  - i) Clean owl boxes
- e) SWAT
  - i) Holiday party
- f) Other