

Did you miss the first three webinars on the fail chapter Management Plans (Human Resources, Ecosystem Management, & Nutrient Management), the Soil Conservation Plan, the Water Management Plan, the Insect & Mite Pest Management Plan, the Powdery Mildew Management Plan, the Soil Borne Management Plan, and the Monitoring Records? No worries - the webinars were recorded and can be viewed at lodigrowers.com under the Education - Videos, Presentations, & Handouts Tab. That is also where all webinar handouts are available. Thank you for your participation this afternoon and please let us know what worked and didn't work for you so we can improve!
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As a reminder, please be sure to **read the introductory material in the Binder (pages 1-6)** which explains a LOT about the Standards and about who to contact with questions. To prepare for your audit, use the Audit Prep Checklist (Tab 10 in the Binder and available at lodirules.com). After reading the Audit Prep Checklist, if you are still unsure of whether or not something counts as a verification document, then contact Heather Muser. If your grape buyer has strong ties to the Lodi Rules program, they may be willing to spend some time helping you with the program too.

Hosts:

Dr. Stephanie Bolton, Sustainable Winegrowing Director, Lodi Rules Program/Lodi Winegrape Commission
Steve Quashnick, Lodi Rules Committee Member and Pest Control Advisor with Wilbur Ellis

Today we will cover three management plans & monitoring records:

Weed Management Plan (LR 6.19, 4 pts) | Vertebrate Management Plan (LR 6.21, 4 pts)
Sprayer/Duster Maintenance Plan (LR 6.24, 4 pts) | Spray/Dust Drift Management Plan (LR 6.27, 4 pts)

General Tips:

- If this is your first year in the Lodi Rules program, keep your plans simple.
- Add the corresponding LR Standard and Title at the top for easy filing.
- List visions and goals, describe the current situation in detail, then list overall management strategies.
- Use the headings in the Standard and organize the plan around those.
- If you haven't written anything longer than an email for years, don't worry - bullet points work too!
- Always include a section at the end for "plan review and update" with lines for dates and signatures
- Review Management Plans at your annual Manager's Meeting (LR 1.3)
- Every year, focus on one area to improve for each plan OR a few plans to improve
- Share your plans with employees and ask for input - retention is EXTREMELY difficult and important these days, and you will be surprised at how effective creating a teamwork environment is at employee satisfaction!

6.19 Weed Management Plan

The farming operation has a written and implemented weed management plan containing the following components: management goals, monitoring techniques and record keeping, control measures, herbicide resistance avoidance strategies, and a plan review and update schedule.	YES = 4
	NO = 0

General Example:



Lodi Rules 6.19: Weed Management Plan

Written 4.20.2012, Updated 2.5.2016

GOALS: We strive to make wise, environmentally conscious, socially responsible, and economically feasible weed management decisions based on current technologies. We pay close attention to emerging and invasive weeds, follow label instructions on herbicides, rotate chemistries, and employ non-chemical control as efforts to reduce resistance build up in pathogen populations when possible. Employees are trained in recognition of weeds. When possible, spot treatments are used.

MONITORING TECHNIQUES and RECORD KEEPING:

The PCA visually monitors the vineyard for weeds at least once every 10 days during the growing season (May - Harvest), and keeps written records, which are then transferred to us via email upon request (LR 6.20). Weed monitoring occurs both within the vineyard block and around the edges. We also train all employees on weed recognition, as they spend a lot of time in the vineyard and may spot a weed issue before the PCA. Our own employees monitor the vineyards for weeds at least once per month during the winter, and we keep written records in our files from those months.

In general, we try to follow these [UC IPM Weed Monitoring Guidelines](#):

- Survey the vineyard in late winter to identify winter annuals and again in summer after perennials and summer annuals have germinated.
- Pay particular attention to perennials. Sketch a diagram of the vineyard and mark areas where perennials are found. A hand held GPS unit also works well for recording locations of perennials. Check for re-growth of perennials a few weeks after cultivation.
- Pay attention to low-lying areas or where water tends to accumulate. These are usually problem areas for weed growth.
- Survey areas around the vineyards as potential sources for wind disseminated weed seeds such as marehail, fleabane etc.
- Keep records of your survey results (including species) and control techniques used.

CONTROL MEASURES:

We maintain a healthy cover crop between every vineyard row, which naturally outcompetes some of the weeds for space. Underneath the vines, we use a pre-emergent herbicide mix once per year in the early Spring. In some cases we also mechanically remove the weeds.

2012	2013	2014	2015	2016	2017
Summer:	Summer:	Summer:	Summer:	Summer:	Summer:
Winter:	Winter:	Winter:	Winter:	Winter:	Winter:
Herbicides:	Herbicides:	Herbicides:	Herbicides:	Herbicides:	Herbicides:

HERBICIDE RESISTANCE AVOIDANCE STRATEGIES: We rotate the mode of action for these herbicides according to HRAC and follow some of their Best Management Practices for preventing herbicide resistance: employing cultural, mechanical, and chemical controls and mixing at least three herbicide chemistries in one application.

<http://hracglobal.com/files/Management-of-Herbicide-Resistance.pdf>

This plan will be reviewed on an annual basis with management and field workers in February.

Review Date: _____

Signatures and Written Names of All Present:

QUESTIONS??

6.21 Vertebrate Management Plan

The farming operation has a written and implemented vertebrate management plan containing the following components: management goals, species of concern, monitoring strategies, control strategies, and a plan review and update schedule.	YES = 4
	NO = 0

General Example:



LR 6.21: Vertebrate Management Plan

Written 4.25.2017

GOALS: We seek to minimize the impact of vertebrate pests on the economic value of our vineyard operation. Employees are trained in recognition of vertebrate pests and their symptoms/presence indicators. When possible, cultural means of control and biocontrol are used.

SPECIES of CONCERN: Ground squirrels, pocket gophers, meadow voles

MONITORING STRATEGIES:

The PCA visually monitors the vineyard for vertebrates at least once every 10 days during the growing season (May - Harvest), and keeps written records, which are then transferred to us via email upon request (LR 6.22). Vertebrate monitoring occurs both within the vineyard block and around the edges. We also train all employees on vertebrate identification, as they spend a lot of time in the vineyard and may spot an issue before the PCA.

Clues we train employees to look for:

- Holes in the ground
- Chewing of drip irrigation lines
- Soil mounds

From "Vertebrate Pests" by Desley A. Whisson and Gregory A. Giusti, <http://www.iv.ucdavis.edu/files/24450.pdf>:

Species	Signs	Cover crop management	Alternate controls
Pocket gopher	Plugged burrow systems; earth mounds; girdling of vines below ground; stunted vines; damage to irrigation lines	Species selection (grass rather than legumes); mowing to reduce cover and facilitate early detection of mounds	Flood irrigation; toxic baits; trapping
Meadow vole	Runways and open burrow entrances; presence of scats; girdling of vines above ground	Species selection (erect bunch-type growth or short plants, avoid high-moisture plants); maintenance of a cover-free strip around bases of vines; mowing to reduce cover	Vine guards; toxic baits
Rabbits and hares	Feeding on foliage and fruit; girdling or complete cutting of vines above ground; observation of activity	In morning and evening delay planting cover crop until vines are approximately 1 year old	Exclusion fence; vine guards; shooting; toxic baits (black-tailed jackrabbit)
Ground squirrel	Girdling of vines above ground; feeding on foliage and fruit; gnawing on irrigation lines; observation of day activity; burrow systems, especially on perimeter of vineyard	None	Toxic baits; burrow fumigation

CONTROL STRATEGIES:

- In our large vineyard blocks (>50 acres), we have one wooden owl box for every 25 acres (LR 6.23). In the small vineyard blocks (<50 acres), we have one wooden owl box per 15 acres. These boxes are mounted on metal poles to prevent predation of the owls and cleaned following manufacturer instructions once per year when they are empty.
- Only when absolutely necessary will we use toxic baits.
- For larger, rare vertebrate issues we will use trapping and removal from the area into an appropriate habitat.

This plan will be reviewed on an annual basis with management and field workers in February.

Review Date: _____

Signatures and Written Names of All Present:

QUESTIONS???

6.24 Sprayer/Duster Maintenance Plan

The farming operation or the custom applicator has a written and implemented sprayer/duster maintenance plan containing a cleaning and maintenance regime for filters, pumps, control units, pressure gauges, nozzles, hoses, the power take off (PTO), booms, and tanks, and a plan review and update schedule.	YES = 4
	NO = 0

Lodi Rules 6.24: Sprayer/Duster Maintenance Plan

Written 4.26.2017



GOALS:

- To ensure proper working order of all sprayers and dusters
- To train employees on the importance of properly working machines
- To properly calibrate our machines before every use

CLEANING AND MAINTENANCE REGIME:

- Cleaning happens after each use (water flushing)
- We keep extra parts on hand for timely repairs (filters, valves, hoses, nozzles, etc.)
- Filters are removed and visually inspected for damage and wear (and replaced as needed)
- Valves on pumps are inspected and repaired as needed
- Control units are tested for leaks and kept lubricated for proper functioning
- Pressure gauges are checked when new nozzles are installed by measuring flow rate and comparing it with a manufacturer's nozzle table
- Nozzles are checked by visual observation before and during applications and worn nozzles are replaced as needed. Applicators are trained on the importance of proper nozzle function.
- Hoses/booms are checked frequently for wear and replaced as needed; hose clamps are tightened before each use
- The PTO shaft is lubricated and the safety guard is checked before each use
- Tanks are checked for cracks and leaks before each use; tanks are emptied and rinsed after each use by spraying out the rinse water in the treated vineyard block
- All metal parts are protected with rust prevention oil
- We have good communication with our applicators on all cleaning and maintenance

This plan will be reviewed on an annual basis in February. Review Date: _____

Signatures and Written Names of All Present:

6.27 Spray/Dust Drift Management Plan

The farming operation has a written and implemented spray/dust drift management plan containing the following components: spray/dust drift management goals, identified sensitive areas, good neighbor policies, established buffers, pesticide rate selection guidelines, equipment operation, weather condition considerations, timing of applications, drift reduction adjuvants, and a plan review and update schedule.	YES = 4
	NO = 0

General Example:



Lodi Rules 6.27: Spray/Dust Drift Management Plan

Written 1.12.2011, Updated 7.26.2016

GOALS:

- To use the minimum number of pesticide applications per year while maintaining effective, cost-efficient disease prevention and control
- To optimize the physical application of pesticides (maximizing the amount of active ingredient applied to the target location)
- To prevent drift incidents (both stemming from our vineyards and into our vineyards)
- To stay informed of current spray technologies which may improve application and reduce drift

IDENTIFIED SENSITIVE AREAS:

- Neighbor's home located east of the Cabernet Sauvignon block on Lester Road.

GOOD NEIGHBOR POLICIES: We maintain personal, friendly communication with our neighbors and the community at large in regards to pesticide applications. We visited our neighbors (mentioned above) and let them know that we need to use pesticides to stay in business but that we carefully manage the applications to reduce drift and if they have any questions or concerns, we are open to communication. We also invite the neighbors to our annual Harvest Dinner in the vineyard. In the community, we attend local grower meetings where drift issues are discussed and represent responsible use of pesticides.

ESTABLISHED BUFFERS: There is a 30-foot buffer present along all roadways.

PESTICIDE RATE SELECTION GUIDELINES: We follow label recommendations and apply only the amount needed for effective control, based upon years of experience, canopy vigor, and talking with our PCA and other growers.

EQUIPMENT OPERATION: Sprayers are properly maintained and calibrated (see the Sprayer/Duster Maintenance Plan, LR 6.24). Sprayers and dusters are turned off at the ends of the vineyard rows as appropriate. All applicators are licensed and trained above and beyond what is required by law. We trust the applicators to make wise decisions regarding pesticide applications (for example, if they determine that a spray needs to be delayed to reduce drift then we support that decision) and have a system of checks and balances in place for added safety and risk reduction.

WEATHER CONDITION CONSIDERATIONS: Weather conditions are monitored before and during applications. As a company policy, we do not apply pesticides when wind speeds are over 8 mph, when air pollution risk levels are high (the AQI is greater than 201), or when there is an inversion layer.

TIMING OF APPLICATIONS: When possible, we apply pesticides during the night or in the early morning hours.

DRIFT REDUCTION ADJUVANTS: The use of drift reduction adjuvants is considered, as recommended by our PCA.

This plan will be reviewed on an annual basis in February. Review Date: _____

Signatures and Written Names of All Present:

Need to attend a Sustainable Vision Workshop? Email stephanie@lodiwine.com ASAP to get on the list!

Questions??



Pictured: Bokisch Vineyards picnic area