2015 LIVE Vineyard Checklist - Draft

Introduction and Scoring

This is a draft version of the *2015 LIVE Vineyard Checklist*. To comply with LIVE requirements, you must submit answers to these items through an online system while logged in as a LIVE member. There may be minor syntax or grammatical inconsistencies between this document and the version that you complete. Every effort is made to keep this reference document consistent with the interactive online version.

The letters next to each item represents a color within the checklist color-coded scoring system that works like this:

- The checklist is divided into broad areas of focus called **Chapters**. Each chapter has a set of corresponding **Control Points**, which each have a set of **Items**. This tiered system allows for an accurate assessment of a site's performance.
- Compliance with red control points and their corresponding red items (R) is 100% required. If you answer No/False to a red item, the vineyard will not achieve a passing score for the checklist.
- Compliance with yellow control points is 90% required. To get credit for a yellow control point, you must comply with at least 50% of its corresponding yellow (Y) items.
- Compliance with green 'bonus' items (G) are 50% required. For control points with more than three green items, you may only receive credit for three. However, we ask that you answer every item on the checklist. The scoring is automatically configured so that you only need 50% of available green items. If you cannot answer yes to a green item for a chapter that does not apply to your vineyard (for instance, irrigation), those items will be eliminated from the available pool of green items. In this example, your green item score will not be lower if you do not irrigate, because those items will not be used to calculate your score.

Contact info@livecertified.org if you have any questions about these standards.

Next page, onto The 2015 LIVE Checklist…

2015 LIVE Vineyard Checklist - Draft

Chapter 1. Farm Management, Documentation, and Training

Control Point 1.1 Documentation and scope of management practices

- 1.1.1 (R) The farm documents and monitors all key pest occurrences. Refer to the LIVE Green List for regional lists of key pests in vineyards.
- 1.1.2 (R) The vineyard uses appropriate cultural and biological control measures, consistent with the LIVE Green List. The Green List outlines cultural and biological pest prevention and control methods for key pests.
- 1.1.3 (R) The farm documents all applications of EPA-registered pesticidesâ€"including insecticides, herbicides, fungicides, etc. The Pesticide Reporting Form is provided as a template. Please note that foliar fertilizers should be reported on the Fertilizer Reporting Form, and adjuvants/surfactants should be reported on the Other Inputs Reporting Form. Refer to item explanation by clicking Notes for detailed documentation requirements.
- 1.1.4 (R) The farm documents all fertilizer applications. This includes ground-applied, fertigated, and foliar products. The Fertilizer Reporting Form is provided as a template. Refer to item explanation by clicking Notes for detailed documentation requirements.
- 1.1.5 (R) The farm documents all irrigation applications. The Irrigation Reporting Form is provided as a template. Refer to item explanation by clicking Notes for detailed documentation requirements.
- 1.1.6 (R) The farm operates with a traceability system that allows its products and their certification status to be identified and traced from point of sale back to the farm's production records. The farm maintains adequate documentation of this system. Product purchased from other farms is clearly identified for tracking purposes.
- 1.1.7 (R) The farm is maintaining all other documentation necessary to demonstrate compliance with LIVE requirements. This includes, but is not limited to: other inputs (in addition to pesticides, fertilizers, and water for irrigation), sprayer calibration and service records, training attendance certificates, soil and petiole analysis, etc.
- 1.1.8 (R) The farm is maintaining truthful documentation demonstrating its compliance with LIVE requirements for a minimum of three years, and is providing access to document available upon request to LIVE and LIVE inspectors.

- 1.1.9 (R) The farm is operating in accordance with LIVE's whole-farm requirements. This includes meeting Salmon-Safe requirements for the property. Refer to item explanation for details and definition of whole-farm.
- 1.1.10 (G) The farm has submitted its annual reporting ten or more days prior to the deadline (i.e. by November 30 of the current growing season).

Control Point 1.2 Training of farm management team

- 1.2.1 (R) A member of the vineyard management team has completed a LIVE general training course, which includes: the LIVE Annual Meeting; any LIVE General Training Sessions; or review of the LIVE Member Training document. Refer to item explanation or Forms and Standards menu to download the training document.
- 1.2.2 (G) A member of the vineyard management team has completed at least one qualifying additional training during the year. Additional trainings include any LIVE lecture, wine industry symposium, educational conferences, extension field days, etc.
- 1.2.3 (G) A member of the vineyard management team has completed at least two qualifying additional trainings during the year. Additional trainings include any LIVE lecture, wine industry symposium, educational conferences, extension field days, etc.
- 1.2.4 (G) A member of the vineyard management team has completed at least three qualifying additional trainings during the year. Additional trainings include any LIVE lecture, wine industry symposium, educational conferences, extension field days, etc.

Control Point 1.3 Traceability of fruit at farm level

- 1.3.1 (R) There is a documented traceability system that allows LIVE and Salmon-Safe certified products leaving the farm to be traced back to the certified farm and to individual plots, production units, etc. Fruit purchased from other farms for any reason is clearly identified for tracking purposes.

Chapter 2. Biodiversity and Ecological Infrastructures

Control Point 2.1 Surface area and components of ecological infrastructures

- 2.1.1 (R) The farm documents and defines all ecological infrastructures and their surface areas on a farm map. The map describes each ecological infrastructure and includes dimensions. The surface area of ecological infrastructures totals at least 5% of the property acreage (excluding buildings and managed woodland). Ecological infrastructures are areas of the farm that are either left wild or managed for the express purpose of promoting biodiversity, wildlife corridors, landscape level continuity, and/or habitat for beneficial fauna.
- 2.1.2 (G) The surface area of ecological infrastructures totals at least 10% of the property acreage (excluding buildings and managed woodland).
- 2.1.3 (G) The surface area of ecological infrastructures totals at least 15% of the entire farm property acreage (excluding buildings and managed woodland).
- 2.1.4 (G) The surface area of ecological infrastructures totals at least 25% of the entire farm property acreage (excluding buildings and managed woodland).

Control Point 2.2 Management practices to enhance biodiversity

- 2.2.1 (R) The farm has implemented at least three practices from the list of green items below (items 2.2.3-2.2.9).
- 2.2.2 (R) The farm maintains and/or improves existing ecological infrastructures.
- 2.2.3 (G) The farm selects equipment to reduce environmental impact and enhance biodiversity.
- 2.2.4 (G) The farm has established new ecological infrastructure during the last growing season, either inside the crop area or outside within a 500 foot radius.
- 2.2.5 (G) The farm has infrastructures outside the crop area with high diversity (five or more plant species), with native species preferentially encouraged.
- 2.2.6 (G) The farm has at least one patch of beneficial plant species of at least 15 square feet in size, maintained within 150 feet of crop area.
- 2.2.7 (G) The farm maintains nesting boxes and/or perches for birds annually.
- 2.2.8 (G) The farm has a minimum of ten non-noxious plant species in the alleyway/intervine strip.
- 2.2.9 (G) The farm takes steps to control weeds on the local state/provincial noxious weed list that are consistent with best management practices for IPM.

2015 LIVE Vineyard Checklist - Draft

Control Point 2.3 Buffer zones between crop area and sensitive off-crop areas

- 2.3.1 (R) The farm maintains a minimum distance of 30-50 feet between crop area and sensitive off-crop area (see item explanation for examples). The minimum distance between crop area and sensitive off-crop area is 50 feet where slopes are greater than 10 degrees.
- 2.3.2 (G) The minimum distance observed on the farm is 50 feet or more between crop area and sensitive off-crop area.

Control Point 2.4 Riparian vegetation protection and restoration

- 2.4.1 (R) The farm map outlines and describes riparian areas, including the size and quality of stream buffer areas. The map indicates areas where riparian function is impaired as well as wetland and upland vegetation on farms.
- 2.4.2 (R) Riparian zones or cultivation setbacks of perennial waterways (year-round flow) and seasonal waterways potentially harboring salmonids are an average of 50-100 feet wide, with a minimum width of 35 feet.
- 2.4.3 (R) Riparian zones and buffer areas are adequately vegetated. Riparian zones and buffer areas are vegetated, contiguous with the channel, and adequately protect water resources.
- 2.4.4 (R) If 100 percent avoidance of disturbance to the riparian zone and buffer area is not possible, impacts are minimized and mitigated to maintain the function and quality of buffers and the water resources they protect.
- 2.4.5 (G) Problem invasive plants within riparian buffers are identified, removed, and replaced with suitable plant species adapted to site conditions.
- 2.4.6 (G) New plantings for buffers are selected to improve overall biodiversity on a site within the constraints of project conditions. Vegetation selected is a diverse mixture of native or noninvasive, non-native species, with a priority given to selection of native species.
- 2.4.7 (G) Where riparian buffer zones are already established, high priority is given to establishing tree canopy cover over salmonid-bearing and potentially salmonid-bearing streams in ways comparable to undisturbed local reference conditions.

- 2.4.8 (G) Dying trees, snags, and downed logs are left undisturbed in riparian buffer areas to provide cover, forage, and habitat complexity for species that use these ecosystems.
- 2.4.9 (G) Water from areas where runoff tends to concentrate is detained and treated before being discharged to the riparian buffer.

Control Point 2.5 Wetland and upland protection and restoration

- 2.5.1 (Y) In dedicated agricultural production areas, wetlands are protected by a minimum 25 foot uncultivated buffer or to the greatest extent operationally feasible.
- 2.5.2 (Y) mpacts to wetland functions, including water quality, water quantity, and habitat connectivity impacts, are minimized within 100 feet of wetlands to the greatest extent operationally feasible.
- 2.5.3 (G) Problem invasive plants in both wetlands and wetland buffers are identified, removed, and replaced with suitable plant species adapted to site conditions. Whenever possible, native species are selected over other plants.
- 2.5.4 (G) Wetlands and wetland buffers should be vegetated consistent with local intact reference wetland conditions.
- 2.5.5 (G) If no livestock are kept on the property, wetlands and wetland buffers may be unfenced to allow unhindered access for local wildlife. Grazing by livestock is minimized and properly managed in wetland areas.
- 2.5.6 (G) Degraded wetlands and wet areas exhibiting poor agricultural productivity have been identified. When possible, there is a plan to remove these areas from production and to restore natural functions to the greatest extent operationally feasible.
- 2.5.7 (G) In upland areas, dying trees, snags, and downed logs are left undisturbed in riparian buffer areas to provide cover, forage, and habitat complexity for species that use these ecosystems.

Control Point 2.6 In-stream habitat protection and restoration

- 2.6.1 (R) Stream and river crossings, in-stream structures, irrigation diversion structures, ponds, and any known historic channel manipulations are inventoried and locations are noted on a site map.

- 2.6.2 (R) Existing stream crossings, including roads and trails, are minimized on the farm property. Stream crossings avoid filling, excavating, or straightening of stream channels; unnecessary removal of wood; and disconnection of off-channel wetlands and ponds.
- 2.6.3 (R) When a new crossing is established, it is designed to avoid impacts to in-stream habitat, allow fish passage, and avoid constriction of flood conveyance during 25-year, 24-hour storm events.
- 2.6.4 (R) Existing channels are protected from new impacts such as filling and excavation, straightening, unnecessary stream crossings, excessive stormwater runoff from agricultural operations and disturbed areas, unnecessary removal of wood, or disconnection of off-channel wetlands.
- 2.6.5 (R) Irrigation ponds that have the potential to have adverse impacts on stream temperature and water quality are not constructed or planned.
- 2.6.6 (R) Irrigation diversion structures are designed to allow adult and juvenile fish passage and do not trap fish.
- 2.6.7 (G) Key in-stream habitat quality deficiencies have been identified, and active efforts are being taken to restore stream channels to their natural conditions using techniques such as bioengineered bank stabilization (typically using a combination of large wood, plants, and other material to stabilize banks) and habitat enhancement.
- 2.6.8 (G) Unnatural in-stream barriers to fish and wildlife have been removed. If barriers exist, plans are in place to remove these barriers.
- 2.6.9 (G) Existing levees have been removed (or set back to avoid encroachment upon the floodplain), floodplains are restored to the greatest extent operationally feasible, and no new levees are proposed.

Chapter 3. Site Selection

Control Point 3.1 Suitability of site

- 3.1.1 (R) Site conditions are compatible with regionally or generally accepted standard for the crop.

Control Point 3.2 Risk assessment and correction plan

- 3.2.1 (Y) New sites used for agricultural production have a site development plan, including a risk assessment, available for inspection. Enter N/A if there have been no new plantings in the last three years.
- 3.2.2 (Y) A written plan has been developed to address controllable risks.
- 3.2.3 (G) Impacted federal and state/provincial sensitive species are surveyed and documented.

Chapter 4. Site Management

Control Point 4.2 Alleyway/intervine strip management

- 4.2.1 (R) In areas that receive more than 15 inches annual rainfall, at least 75% of the vineyard floor has green alleyway cover between November 1st and March 1st. In areas that receive less than 15 inches annual rainfall, other types of cover may be acceptable.
- 4.2.2 (R) The area treated with herbicide below the grapevines is less than 40% of the row spacing, or no herbicide is used.
- 4.2.3 (R) The farmâ€™s weed control strategy addresses weed shifts. See item explanation for details on rotating the mode of action for weed control.
- 4.2.4 (R) The vineyard has completed the LIVE Weed Survey prior to use of any residual herbicides listed on the LIVE Yellow List.
- 4.2.5 (G) The area treated with herbicide below the grapevines is less than 25% of row spacing.
- 4.2.7 (G) The vineyard uses an alternating mowing regime to promote season-long flowering in the vineyard.
- 4.2.8 (G) Flail/mulching mowers are only used to chop prunings. All other mowing is done with rotary mower.
- 4.2.9 (G) Management of the vineyard floor employs methods that promote biodiversity in a manner consistent with regional conditions.
- 4.2.10 (G) The farm does not use herbicides.
- 4.2.11 (G) The farm has completed the LIVE Weed Survey prior to use of any herbicides listed on the LIVE Yellow List.

- 4.3. Soil fertility and soil protection

- 4.3.1 (R) If soil erosion is evident, immediate corrective action is taken.
- 4.3.2 (R) The farm's choice of cultivation reflects assessment of site-specific risk and soil conditions.
- 4.3.3 (R) The vineyard does not use soil fumigation or chemical products with highly residual properties. The vineyard's use of EPA-registered pesticides conforms with the products listed for the vineyard's region on the LIVE Yellow List.
- 4.3.4 (G) Cover crops are present in the vineyard over winter, covering at least 95% of the vineyard floor.
- 4.3.5 (G) Biomass-building cover crops, compost, or mulches are used to maintain or improve soil organic matter.
- 4.3.6 (G) All organic farm waste is recycled on-farm.
- 4.3.7 (G) The farm's selection and use of machinery reduces soil compaction and preserves organic matter.

Chapter 5. Varieties, Rootstock, and Planting

Control Point 5.1 Choice of varieties, clones, and rootstock

- 5.1.1 (Y) The vineyard has used varieties, clones, and rootstock appropriate for the site and local growing region.
- 5.1.2 (Y) The vineyard has used pest and disease resistant or tolerant varieties, clones, and/or rootstocks appropriate for the site and local growing region.
- 5.1.3 (G) The vineyard has established experimental blocks to test site suitability for varieties, clones, and rootstocks.

Control Point 5.2 Plant material quality and health

- 5.2.1 (Y) Plant material purchases are certified or sourced locally from a licensed nursery, with records available upon request.
- 5.2.2 (G) Purchased clonal material is accompanied by a certificate that verifies the variety, clone, rootstock, quantity, date, and source.

- 5.2.3 (G) Purchased clonal material is accompanied by a certificate that verifies the variety, clone, rootstock, quantity, date, and source.

Control Point 5.3 Use of genetically modified organisms (GMOs)

- 5.3.1 (R) The vineyard does not use genetically modified organisms (GMOs).

Control Point 5.4 Pre-planting and training systems

- 5.4.1 (R) Soil analysis and mapping has been performed prior to vineyard planting.
- 5.4.2 (G) Advanced soil survey techniques were use in the development of the vineyard.
- 5.4.3 (G) Nutrient deficient soils have been amended prior to planting based on soil analysis.

Chapter 6. Plant Nutrition

Control Point 6.1 Soil and tissue analysis data

- 6.1.1 (R) The vineyard uses a fertilizer plan and incorporates results of soil and tissue tests.
- 6.1.2 (R) Soil nutrient analysis not older than seven (7) years is available. Tissue nutrient analysis not older than three (3) years is available.
- 6.1.3 (G) Annual tissue analysis is performed.

Control Point 6.2 Fertilizer plan

- 6.2.1 (R) A fertilizer plan has been developed and is available upon inspector request. Deviations from this plan must be documented and justified.
- 6.2.2 (G) A nutrient balance sheet has been developed for the entire farm for all macro- and micronutrients. This consists of actual nutritional inputs minus exports from farm. Calculate this using standard nutritional content for wine grapes and applicable crops.
- 6.2.3 (G) Soil organic matter content is known for the farm.
- 6.2.4 (G) An unfertilized test plot is established.

- 6.2.5 (G) Total amount of each individual nutrient (N, P, K, Mg, B, Zn, etc.) applied per acre and per plot is documented.

Control Point 6.3 Nutrient-loss reduction measures

- 6.3.1 (R) Precautions are taken to avoid potential nutrient losses due to over-fertilization, water and wind erosion, and leaching.
- 6.3.2 (G) At least two nutrient-loss prevention measures have been established.

Control Point 6.4 Nitrogen supply and timing

- 6.4.1 (R) Nitrogen applications are performed in accordance with a fertilization plan. Deviations from this plan are justified and recorded.
- 6.4.2 (R) Direct applications of synthetic nitrogen occur only between March 1 and October 30, while healthy leaves are still functioning.
- 6.4.3 (R) Nitrogen applications are based on documented need and are consistent with regional replacement values.

Control Point 6.5 Other nutrients supply and timing

- 6.5.1 (R) The amount of phosphorus, potassium, and magnesium applied should not exceed either nutrient replacement values or regional limits set by LIVE. See the Green List or Mullins Nutrient Replacement Chart for these values. Deviations of 10% or more from the amount stated in the fertilizer plan are documented and justified.
- 6.5.2 (G) Vineyard practices are used to encourage mycorrhizal development to enhance phosphorous and water uptake.

Control Point 6.6 Storage of fertilizers

- 6.6.1 (Y) Fertilizers are stored separately from pesticides to prevent cross-contamination.
- 6.6.2 (Y) Fertilizers are stored in a covered, dry, and clean area.
- 6.6.3 (Y) Fertilizers are stored separately from fresh produce and plant propagation material.

- 6.6.4 (Y) Fertilizer are stored in an appropriate manner to avoid water contamination.
- 6.6.5 (Y) Fertilizer storage units are secured when not in use.
- 6.6.6 (G) Fertilizer stock inventory list is kept up-to-date and available on the farm for inspection.

Control Point 6.7 Human sewage sludge (GlobalGAP requirement)

- 6.7.1 (R) Human sewage sludge is not used on the farm.

Control Point 6.8 Organic materials testing

- 6.8.1 (R) Fertilizers and waste-compost (i.e. manure) obtained from off-farm sources must have been analyzed for heavy metals and nutrient content prior to application. If there is a concern about contaminating toxins, additional analysis may be required.

Chapter 7. Irrigation

Control Point 7.1 Irrigation planning, monitoring, and decision-making

- 7.1.1 (R) The farm has an irrigation plan that specifies water sources, an irrigation strategy for each block, methods of irrigation and determining quantity of water used, and tools used to make irrigation decisions.
- 7.1.2 (R) The farm uses irrigation only when plant physiology or visual/quantitative data evidence need. Visual and quantitative data include: visual symptoms, ET data, soil moisture monitoring, and more. Evidence of need is documented in irrigation records. See item explanation for details.
- 7.1.3 (R) The maximum amount of water applied has not exceeded the soil water holding capacity.
- 7.1.4 (R) Irrigation is only used to promote the maintenance of plant health and fruit quality. Justification for irrigation is required based on visual symptoms, ET data, soil moisture monitoring, etc.
- 7.1.5 (R) An irrigation strategy for each block has been established.

2015 LIVE Vineyard Checklist - Draft

Control Point 7.2 Irrigation methods

- 7.2.1 (R) The farm has not used flood irrigation.
- 7.2.2 (G) The farm does not use overhead sprinklers for irrigation.
- 7.2.3 (G) The farm uses microirrigation (i.e. drip irrigation).
- 7.2.4 (G) The farm routinely monitors the performance of irrigation system equipment to ensure that motors, pumps, and delivery systems are performing well and according to specifications.

Control Point 7.3 Water quality

- 7.3.1 (R) If irrigating, an irrigation suitability test including copper is performed on the water source(s) every five years. Analysis must show no adverse ag-pollutants. See item explanation for details.
- 7.3.2 (R) The grower has not used untreated sewage water for irrigation/fertigation. See item explanation for details.
- 7.3.3 (G) Annual analysis of water quality is performed, testing for heavy metals, nitrogen, and Na/Cl.

Control Point 7.4 Water source

- 7.4.1 (Y) Irrigation water is obtained from a legal, state-approved, and sustainable water source.
- 7.4.2 (Y) An accurate system is used to determine the amount of irrigation water applied.
- 7.4.3 (G) Collected surface water is used for irrigation.

Control Point 7.5 Water use management to protect fish

- 7.5.1 (R) For farms with a choice of irrigation water sources, the selected source of irrigation water results in the least potential impact to in-stream flows of fish-bearing streams both on farm property and downstream of it.
- 7.5.2 (R) Fish losses from entrapment are avoided by installing fish screens on diversions in accordance with Washington Department of Fish and Wildlife (WDFW, 2000), Oregon

Department of Fish and Wildlife (ODFW), or other similar guidance specific to the farm's geographic location.

- 7.5.3 (R) Work on diversions, including installing and servicing pumps and intakes, is only done when salmon are not present in streams, during approved in-stream work periods, and in accordance with state and local regulations and permits.
- 7.5.4 (G) If the only available irrigation source is salmon-bearing or potentially salmon-bearing streams, irrigation withdrawals are not harming fish or significantly limiting habitat quality for fish.
- 7.5.5 (G) If excess water rights that are not used for crop production exist for the property, consider leasing these excess water rights to the Washington Water Project of Trout Unlimited, Oregon Water Trust, Washington Water Trust, or the Columbia Basin Water Transactions Program.

Chapter 8. Integrated Protection Measures for Farm Crops

Control Point 8.1 Application of the LIVE Green and Yellow lists

- 8.1.1 (R) The vineyard demonstrates knowledge of at least two key beneficial insects for its region and has a strategy that addresses their protection.
- 8.1.2 (R) The vineyard employs the IPM measures in the Green List and Yellow List in an appropriate manner. See item explanation for details.

Control Point 8.2 Recording pests and diseases, and applying thresholds

- 8.2.1 (R) Pests and disease have been monitored and recorded per university IPM guidelines. See item explanation for details.
- 8.2.2 (G) Monitoring traps are used in the vineyard as a scouting tool.

Control Point 8.3 Use of pesticides

- 8.3.1 (R) If EPA-registered pesticides (insecticides, fungicides, herbicides, etc.) are used, the vineyard's use of these materials conforms with the listings and limits on the LIVE Yellow List.

- 8.3.2 (R) The regional Yellow List limit for sulfur use has not been exceeded.
- 8.3.3 (R) The vineyard does not use copper as a fungicide.
- 8.3.4 (R) The vineyard has practiced mode of action rotation when applying pesticides. Pesticides of the same mode of action have not been used consecutively (excluding herbicides, sulfur, oil, and biofungicides). For herbicide resistance management requirements, see Chapter 4.
- 8.3.5 (G) The vineyard uses less than 20 pounds of sulfur per acre.
- 8.3.6 (G) The grower has not applied copper on the farm.

Control Point 8.4 Other inputs used in the vineyard

- 8.4.1 (Y) The grower records all other inputs used in the vineyard on the LIVE Other Inputs Reporting Form. These are defined as inputs added to a crop by any means with the purpose of either influencing the health, production or establishment of the crop, or aiding in the influence of EPA-registered pesticides or fertilizers to the crop. Examples of other inputs are: spray tank adjuvants; non-EPA-registered pest control compounds, chemicals or treatments; graft seal; plant hormones; plant vitamins; polymer moisture retention soil additives; micorrhyaze innoculum; etc.

Control Point 8.5 Pre-harvest intervals (PHI) and residue levels

- 8.5.1 (R) If EPA-registered pesticides are used, the farm has recorded and conformed to required pre-harvest intervals (PHI).
- 8.5.2 (G) The grower has not applied pesticide after 50% color change (veraison).

Control Point 8.6 Pesticide storage conditions

- 8.6.1 (R) Pesticides are secured in storage in accordance with state and federal law.
- 8.6.2 (R) Emergency measures (e.g. emergency phone numbers) are clearly visible in measuring and mixing area.
- 8.6.3 (R) Dry pesticides are stored above liquid ones.
- 8.6.4 (R) A pesticide stock inventory is current and available on the farm.
- 8.6.5 (R) Each pesticide is stored in or with its original labeled package.

- 8.6.6 (G) Pesticide mixing/loading station exceeds state and federal environmental standards.

Control Point 8.7 Spray equipment

- 8.7.1 (R) The spray equipment is serviced by a qualified technician at least once every four years.
- 8.7.2 (R) The spray equipment is calibrated annually according to manufacturer specifications and documented.
- 8.7.3 (G) Spray equipment is used that has been proven to reduce pesticide amount and/or drift.

Control Point 8.8 Disposal of agricultural chemicals

- 8.8.1 (R) The safe disposal of obsolete pesticides is planned and recorded.
- 8.8.2 (R) Surplus mix or tank washings are applied over an untreated part of the crop, without exceeding the maximum authorized dose.
- 8.8.3 (R) Empty containers are triple-rinsed and delivered to authorized firms upon disposal.

Chapter 9. Harvesting and Food Safety

Control Point 9.1 Worker hygiene

- 9.1.1 (Y) Workers have access to hand washing equipment and clean toilet facilities located at a distance less than that required by state health and safety requirements.
- 9.1.2 (Y) Adequate drinking water is available to workers as required by state law. Workers are encouraged to take hydration breaks during hot weather.

2015 LIVE Vineyard Checklist - Draft

Chapter 10. Post-Harvest (IOBC requirement for fresh produce, not applicable to LIVE)

Chapter 11. Management Systems on Farms with Livestock

Control Point 11.1 Livestock density and animal welfare

- 11.1.1 (R) The farm records show total livestock units and the surface of agricultural land. The livestock units per acre have been calculated based on the LIVE Livestock Unit Conversion Chart and do not exceed one per acre on average when calculated for the whole farm.
- 11.1.2 (R) Holding conditions for livestock satisfy national legal regulations.
- 11.1.3 (G) The livestock density does not exceed one livestock units per five acres agricultural surface. If the density is higher, the farmer has made a delivery contract for the excess manure with farmers that have no livestock or can absorb the imported manure without exceeding the critical livestock density.

Control Point 11.2 Animal management

- 11.2.1 (R) On pasture lands, adequate forage remains or is restored throughout the year to protect soil and root systems, promote water infiltration and soil fertility, and to filter surface water runoff.
- 11.2.2 (R) Corridors and trails used to move livestock around pastures or to rangeland are managed to limit gullying and erosion, and to preserve vegetation cover.
- 11.2.3 (R) Fencing, water gaps, dense vegetation, or other methods are utilized to prevent unwanted livestock access to streams and other fish-bearing water bodies. Alternative watering methods, like solar pumps, nose pumps or wind pumps, are considered.
- 11.2.4 (R) Intensive rotational grazing systems are utilized to help prevent compaction and erosion, maintain adequate stubble heights, and to allow pastures to recover from grazing.
- 11.2.5 (R) Forage areas are routinely monitored for invasive plant populations.

- 11.2.6 (R) Watering facilities are installed that limit or eliminate the need for livestock to have access to streams and irrigation ditches, whenever operationally feasible.
- 11.2.7 (R) There is a manure management system in place to prevent contamination of surface or groundwater by animal waste. There is no evidence of manure leachate overflow from manure storage areas.
- 11.2.8 (R) There is a manure storage management plan in place, taking into consideration a 25-year, 24-hour storm event.
- 11.2.9 (R) In general, sufficient storage capacity to store 120 to 180 days of manure production, unless the operation has access to other environmentally acceptable methods to recycle manure nutrients.
- 11.2.10 (R) All manure or compost piles are covered during rainy periods, or another leachate containment system appropriate to the scale of the compost system is in place. Non-commercial-scale compost piles may not need to be covered, and grass buffers may be used as containment if there is no evidence of runoff.
- 11.2.11 (R) Confined livestock facilities, manure piles, liquid storage tanks, and lagoons are not located in floodplains or areas with shallow groundwater tables or frequently moist or saturated soils.
- 11.2.12 (R) Livestock confinement and manure storage facilities are designed to prevent any direct or indirect flow of manure into streams, rivers, or other surface waters in the event of sustained heavy rains and runoff, ruptures in storage tanks, leaching from in-ground pits, or breaching of storage lagoons.
- 11.2.13 (R) If manure is applied to fields and pastures, it is done so at agronomic rates, preferably in the form of compost. This field application should not be done during the rainy season. Where appropriate, fields are dragged to ensure even distribution of manure.

Chapter 12. Worker Health and Safety

Control Point 12.1 Health and safety responsibilities, instructions, and training

- 12.1.1 (Y) A member of the management is clearly identified as the responsible person for worker safety, health and welfare issues.

- 12.1.2 (Y) A hazard communications program is actively communicated to the workforce.
- 12.1.3 (Y) Each worker operating dangerous or complex equipment or in enclosed spaces have received formal training. This training can be performed by a vineyard employee authorized to do so.
- 12.1.4 (Y) New employees receive orientation training including Workers' Right to Know, and all training is documented.

Control Point 12.2 Accident procedures and protective clothing/equipment

- 12.2.1 (Y) First aid boxes are available and accessible in the vicinity of the work area.
- 12.2.2 (Y) Written accident and emergency procedures describe how to act in the event of an accident or emergency. They must clearly identify the contact persons, indicate the location of the nearest phone, display an updated list of relevant phone numbers (doctor, ambulance, fire-department, hospital, police, etc) and make the phone accessible all the time.
- 12.2.3 (Y) An accident procedure visually displays the basic steps of primary accident care and is accessible within 30 feet of the pesticide storage facilities and all mixing areas.
- 12.2.4 (Y) Workers applying pesticides in open cab tractors have a set of personal protective equipment (PPE).
- 12.2.5 (Y) All personnel who apply pesticides can demonstrate their competence via official qualifications or specific training course attendance certificates.
- 12.2.6 (G) Permanent and legible signs are posted that indicate potential hazards (e.g. waste pits, fuel tanks, electrical equipment, toxic material, pesticide and fertilizer storage facilities).

Control Point 12.3 On-site living quarters

- 12.3.1 (R) The living quarters for the workers on the farm are habitable, have a sound roof, windows and doors, and the basic services of drinking water, clean toilets and free-flowing drains.

Control Point 12.4 Worker rights and benefits

- 12.4.1 (R) Illegal child labor is not used (GlobalGAP requirement).
- 12.4.2 (R) Forced labor is not used (GlobalGAP requirement).
- 12.4.3 (G) Wages paid for regular working hours exceed legal minimums.
- 12.4.4 (G) Regular meetings are held between labor and management at which general health, safety, and welfare matters are discussed.
- 12.4.5 (G) Healthcare benefits and/or services are provided to the workers
- 12.4.6 (G) Agricultural exempt employees are paid overtime wages.
- 12.4.7 (G) Employees are provided with opportunities for continuing education and professional development.