



# LIVE

LOW INPUT VITICULTURE AND ENOLOGY, INC

## **HISTORY OF LIVE**

## **GUIDELINES FOR INTEGRATED PRODUCTION OF GRAPES\***

## **REPORTING REQUIRMENTS**

## **HOW TO JOIN**

\*Information adapted from IOBC Guidelines for Integrated Production of Grapes, 2<sup>nd</sup> Edition 1999



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## History of LIVE

- Grassroots grower-based organization formed in mid-90's
- Incorporated as 501(c)3 in 1999
- Salmon-Safe partnership formed in 1999
- PESP Champion (Pesticide Environmental Stewardship Program) in 2002 and 2003
- Grown to include both Oregon and Washington (2006)
- Winery certification program developed in 2008
- Currently 188 vineyard members covering over 7500 acres
- 9 Board members and 4 Technical Committees



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## Definition and Objectives of Integrated Production in Viticulture

### **Definition:**

The economical production of high quality grapes, giving priority to ecologically safer methods, minimizing the undesirable side effects and use of agrochemicals, to enhance the safeguards to the environment and human health



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## Definition and Objectives of Integrated Production in Viticulture

### Objectives:

- To promote viticulture that respects the environment, is economically viable, and sustains the multiple functions of agriculture, namely its social, cultural and recreational aspects
- To secure a sustainable production of healthy grapes of high quality and with a minimum occurrence of pesticide residues
- To protect the farmers' health while handling agro-chemicals



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## Definition and Objectives of Integrated Production in Viticulture

### Objectives:

- To promote and maintain a high biological diversity in the ecosystem of the vineyard and in surrounding areas
- To give priority to the use of natural regulating mechanisms
- To preserve and promote long-term soil fertility
- To minimize pollution of water, soil and air



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## **Professionally trained, environmentally and safety-conscious growers**

- Vineyard managers participating in LIVE must be professionally trained in all aspects of Integrated Production by attending locally organized training courses
- Should have a thorough knowledge of the aims and principles of Integrated Production and of LIVE guidelines and standards
- Should have a positive and sympathetic attitude to environmental conservation and human health and safety
- LIVE members are required to be trained in year 1 and are highly encouraged to attend further training courses in subsequent years of membership



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## Conserving the Vineyard Environment

A balanced and natural vineyard environment with a diverse agro-ecosystem of plants and animals must be created and conserved.

- 5% Minimum Ecological Compensation Zones
  - Non-inputs of agrochemicals
  - Promote biodiversity of flora and fauna
  - Promotes beneficial insect habitat
  
- Green cover in winter is mandatory
  
- Permanent green cover encouraged
  
- Alternating mowing regime



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## Site, Rootstocks, Cultivar and Planting Systems for New Vineyards

- Frost pockets and poor drainage should be avoided
- Disease resistant and diverse cultivars, rootstocks, and clones should be chosen
- Certified plant material should be used



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## Site, Rootstocks, Cultivar and Planting Systems for New Vineyards

### Training systems

*Preference must be given to training systems facilitating the application of cultural techniques favoring:*

- The production of high quality grapes
- Vine longevity
- Biological diversity (botanical and zoological)
- The protection of soil against erosion
- Reduction of conditions favorable for the development of insect pests and diseases
- A more efficient application of pesticides
- Reduction of the amount of pesticides applied



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## Site, Rootstocks, Cultivar and Planting Systems for New Vineyards

### Soil Analysis and Preparation

- Soil analysis: texture, organic matter, macro nutrients ( at least P, K, Mg)
- Basic fertilization with organic and/or mineral components if necessary
- Land improvement if necessary (e.g. drainage, increasing content of organic matter where below 1%)
- Thorough elimination of sources of disease inoculum (i.e. roots of old vines)
- Elimination of perennial problem weeds



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## Soil Management and Nutrition

Structure, depth, fertility, fauna and micro-flora of the soil must be conserved and nutrients and organic matter recycled where possible.

- Maximum nitrogen application and period of application are defined regionally
- Encouraged to reduce nitrogen whenever possible to minimize leaching
- The applied amount of K and P indicated by the soil or plant analysis should not exceed the indicated amount by more than 10%
- Foliar sprays should be restricted to clearly defined and justified cases



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## Alleyways and Weed-free Strip

- Aim to avoid soil erosion and compaction without detriment to yield and quality
  
- Maintain and enhance plant species diversity in the vineyard in order to increase ecological stability
  
- Minimize the use of herbicides
  - Use of cultivation
  - Green cover



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## Irrigation

- Irrigation must be applied according to need
- Excessive soil moisture may result in leaching of nutrients
- Excessive use of irrigation water is wasteful
- Irrigation of vines for wine production not allowed after véraison (BBCH-Scale 81-85)



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## Canopy Management

Grapevines must be trained and pruned to achieve a balance between growth and regular yields and to allow good penetration of light and sprays.

Proper ventilation of the grape zone in humid areas is an important and mandatory prophylactic measure against diseases (especially Botrytis).



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## Integrated Plant Protection

- All available prophylactic measures (indirect plant protection) must be applied before direct control measures are used
- At least two key beneficial insects must be protected and encouraged



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## Integrated Plant Protection

### Indirect Plant Protection

- Resistant clones and cultivars
- Appropriate choice of planting and training systems
- Avoidance of excess nitrogen
- Canopy management
- Green cover
- Beneficial insects



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## Integrated Plant Protection

### Risk Assessment and Monitoring

- Populations of pests and diseases must be monitored and recorded regularly
- Approximate infestation levels are determined
- Decision to use direct plant protection must be based on thresholds of existing and validated forecast models



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## Integrated Plant Protection

### Direct Plant Protection

Priority must be given to natural, cultural, biological and highly specific methods of pest, disease and weed control, and the use of agrochemicals must be minimized

- Use of pesticides only when justified
- Most selective, least toxic, least persistent product or control procedure, which is as safe as possible to humans and the environment, must be selected
- LIVE uses a Yellow List of Approved Pesticides for two distinct growing climates (LIVE Region I and II)



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## Integrated Plant Protection

### Selection of Pesticides

Pesticides are evaluated by Technical Committee on a regular basis based on the following criteria

- Toxicity to man
- Toxicity to key natural enemies
- Toxicity to other natural organisms
- Pollution of ground and surface water
- Ability to stimulate pests
- Selectivity
- Persistence
- Incomplete information on the pesticide



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## Integrated Plant Protection

### Not Permitted

- Pyrethroid insecticides and pyrethroid acaricides
- Organochlorine insecticides and acaricides if safer alternatives exist
- All acaricides toxic to Phytoseiid mites
- Toxic, water polluting or very persistent herbicides (e.g. Diquat, Paraquat)
- Items on Salmon-Safe *High Risk List*



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## Integrated Plant Protection

### Permitted With Restriction

- Broad-spectrum organo-phosphate and carbamate insecticides
- Acaricides moderately harmful to Phytoseiid mites
- Dithiocarbamate fungicides (maximum of 3 applications per season and not in succession, so that predatory Phytoseiid mites are not affected)
- Sulphur (use must be limited so that predatory Phytoseiid mites are not affected)
- Fungicides with high potential to develop resistance (maximum number of 3-4 applications)
- Copper
- Residual herbicides with  $dt_{90} < 1$  vegetation period: the situations of their exceptional use must be clearly specified



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## Efficient and Safe Spray Application Methods

- Spraying equipment and spraying conditions minimizing the health risk of the operator and drift are preferred
- Sprayers have to be calibrated annually by the grower and serviced by a recognized agent at least every four years.
- When new sprayers are purchased, transverse flow designs or tunnel sprayers should be selected where possible.



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## 3<sup>rd</sup> Party Inspection

- Members are visited in years 1 and 2 and every 3<sup>rd</sup> year thereafter (For winery program, year 1 and every 3<sup>rd</sup> year thereafter)
  
- Inspection fee is only billed in years inspected
  
- Inspector looks for compliance with LIVE standards
  - Checklist review
  - Mandatory recordkeeping is audited
  - Vineyard walk
  - Biodiversity and ecological compensation zones



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## LIVE Reference Documents

- LIVE Regional Passport
  - Key Pests
  - Key Beneficials to be protected
  - Regional information such as rainfall data
  - Cultural controls (Green/Yellow lists)
  
- LIVE Yellow List of Approved Pesticides
  - Region Specific
  - Reviewed and updated annually
  - To be used only after (or in conjunction with) cultural methods and with valid reason and documentation



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## Salmon-Safe

- Certification in year 1 if in compliance
- Inspection is included at no extra cost and is performed simultaneously with LIVE inspection
- Salmon-Safe addendum and High Risk Pesticide List available on [www.liveinc.org](http://www.liveinc.org)



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## Reporting Requirements

- LIVE Checklist
  
- Input Reporting
  - Pesticide
  - Fertilizer
  - Irrigation
  
- Salmon-Safe Addendum
  
- To be completed on [www.liveinc.org](http://www.liveinc.org)
  
- Deadline of December 10<sup>th</sup> without exception



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## How to Join Vineyard Certification Program

- Navigate to [www.liveinc.org](http://www.liveinc.org) and click the link to *Enroll a Property*
- Accept terms and conditions of membership and fill out contact information
- Pay invoice of appropriate fees
  - Application fee: \$100
  - Annual dues: \$175 up to 20 acres + 2/acre over 20
  - Inspection fee: \$275 (Western OR) | \$300 (Eastern OR and WA)
- You will be sent a username and password and a vineyard management page will be created for you



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## How to Join Winery Certification Program

- Navigate to [www.liveinc.org](http://www.liveinc.org) and click the link to *Enroll a Property*
- Accept terms and conditions of membership and fill out contact information
- Pay invoice of appropriate fees
  - Application fee: \$100
  - Annual dues: \$500
  - Inspection fee
    - \$600 – Under 10k cases/year
    - \$900 – Between 10k and 50k cases/year
    - \$1200 – Over 50k cases/year



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## Questions?

If you have any questions, comments or concerns, please email [info@liveinc.org](mailto:info@liveinc.org) or call 503-584-7274.

*Chris Serra, Program Manager*

*Betty O'Brien, LIVE Chair*

*Jason Tosch, Vineyard Certification Technical Committee Chair*

*Ed Fus, Winery Certification Technical Committee Chair*