Scheduling for the First Year of Development - Planning, Ordering, Preparation

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This seminar is primarily about the technical aspects of developing vineyards, but I wish to dwell on a philosophical point to begin with. As growers and participants in our actively growing wine industry it is important to recognise that any vineyard investment must be undertaken with a long term view. Developments with a short term view and for short term gain are irresponsible, unsustainable and not the proper use of our resources. We must aim to build vineyards which become stable agricultural enterprises in which financial and natural resources (land, soil, water) are used optimally.

The best vineyards are always those which have been well planned from the beginning, and those in which risks have been minimised. It is very important to be clear about the reasons for becoming involved in vineyard development, and to recognise that a significant financial and personal commitment to a vineyard project is necessary.

Background research and planning

Understand the financial implications of the decision to plant vines, and the financial commitment required:

• seek professional assistance
• prepare development budgets
• determine the appropriate size of the vineyard for the funds available and for the objectives of the enterprise.

When purchasing land, or changing from another form of land use, thoroughly check the following:

Approvals

• Is vineyard development an approved land use by local council? Seek approval.
• Can surface water be stored in dams? What percentage of catchment is permitted? Seek information from local council. If water from a creek or river is stored, check that there is no Riparian rights issue with downstream neighbours.
• If vineyard is to be close to a town, or to a neighbouring property which is not involved in grapegrowing, will the operations impinge on neighbours, or contravene regulations, e.g. noise, dust, chemicals?
• Scrub/tree clearance

Water

Irrigation: has water used for irrigation ever been saline, or contaminated? Check the condition of bores and/or dams, have water tested for pH, salinity and iron content

Soil

Previous crops: are there likely to be any residual soil pathogens, nematodes or phylloxera? Have soil tested.
Soil analysis: pH, salinity, aluminium content at the very least.
Herbicides: have hormonal herbicides been used; any residual herbicides?
Soil survey: a thorough and detailed soil survey is usually necessary before proceeding too far with plans for a vineyard. A preliminary investigation to determine adequate depth of topsoil (35cm minimum) must be made, prior to committing to plant vines.
Occurrence of low lying, water logged areas.
Previous fertiliser applications?

Climate

Seek local and site specific climatic data: frequency of hail and frost, direction and seasonal occurrence of wind.

Infrastructure

Proximity of power, roads/access.

Other issues

If the vineyard is to be a diversification from current farming practice, questions which should be considered include how will it fit in with other operations on the farm? e.g. no hormonal herbicides can be used; need for secure fencing, timing of harvest—will it coincide with other farm operations, who on the farm will actually do the work? Will contractors be used? Check availability and commitments of contractors.

Discuss sale of fruit with several wineries. Weigh up benefits and/or disadvantages of dealing with one or several wineries. Generally it is a good idea to spread the risk by dealing with more than one, but if the production is small then one winery may be a better bet in order to maximise the quantity of fruit delivered. Small tonnages of fruit create problems for most wineries. Obtain written contract, or letter of agreement, prior to commencing vineyard development.

Vineyard design and layout

Significant property planning issues

• Total vineyard area includes planted area plus 10–20%, because some must be allowed for headlands, fences, wet spots, trees, pipelines, dams, etc.
• All-weather access is critical
• Allow adequate access for working equipment (including harvesters) delivery vehicles and fruit transport trucks.
• Identify loading/unloading point: is a ramp needed?
• Allow for water filling points throughout the vineyard.
• Large developments may need small lockable chemical storage outposts.
• Centralise operations— if possible centralise an area with shed, office/record keeping place, lockable chemical storage, and if feasible, irrigation controls.
• Susceptibility to soil erosion— ensure vine rows, roadways and waterways are appropriately designed and placed.

Scheduling

This background research must be done before a final decision is taken to plant vines, especially if the grower is new to the industry. Once the decision has been taken, the planning of the actual project should commence.

Ordering of materials

• Plants: should be ordered 18 months to 2 years ahead of planting to ensure availability of good quality rootlings or
11. Land preparation. It is essential that land preparation gets under way early in the autumn preceding planting. Ripping should be done when the soil is dry or only slightly damp; if done when wet, major soil structural damage can occur. The bulk of soil preparation and weed control is best done before winter; March.

12. Application of superphosphate, and gypsum, lime or manure if necessary: must be done before soils become too wet; March/April.

13. Planting of mid row cover crop if appropriate, windbreak for new vines; March/April.

14. Sow cover crop in planting row on steep slopes to stabilise soil; March/April.

15. Irrigation and trellis installation; March–August.

16. Weed control in planting rows, herbicide (or cultivation where no trellis exists); September.

17. Planting: do not plant later than the end of November anywhere, as vines will not make sufficient growth to establish strong root systems in the first year; start in July in warmer areas, through to the end of October (depending on area).

Thorough planning of vineyard development and ongoing management is crucial. Vineyards are large capital investments which should be planned and designed so that they remain productive and profitable for many years. It is very important that we practise sustainable viticulture, which demands that we care for the vines as well as our natural resources of land and water.

**Site Planning and Preparation**

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During and after the decision to plant or replant a vineyard, the planning and preparation offer critical steps towards the successful completion of the investment. The process of soil survey and irrigation evaluation are simple, but are far too often overlooked in the need for haste and cost savings. This paper highlights the benefits of both the soil survey and irrigation evaluation and the effects they can have on the development of a vineyard.

**Soil survey**

By my definition a soil survey is a systematic method of defining soil characteristics to enable the determination of potential vine growth.

Physically it is a mapped series of holes, generally 2 m backhoe pits on a 75 m × 75 m grid, which enables a trained soil scientist to identify and measure soil characteristics. Obviously not all sites will allow 2 m holes and often auger holes will provide sufficient information. Similarly, on some sites where soil variation is expected to be great, a more detailed grid should be used.

The soil characteristics generally measured are:
- soil types
- horizon depths
- structure
- impeding layers
- pH
- salinity
- other chemicals
- pests and diseases

These characteristics can then be plotted individually or used to calculate other parameters which will have a more significant bearing on potential vine growth. These parameters include:

- Top soil depth and type: a simple observation made according to well defined soil type definitions.
- Depth to an impeding layer: once again an observation for the occurrence of lime, clay and/or water. Besides affecting the potential root zone this is important in determining ripping depth, the type of soil ameliorant and the requirement for drainage.
- Root zone depth: a notional calculation using an experienced evaluation of potential penetration of vine roots into an impeding layer.
- Readily available water (RAW): again a calculation based on the water holding capacity of different soil types and their ability to release water to the vine.