



THE NEW ZEALAND LAVENDER GROWERS ASSOCIATION INC.

A GUIDE FOR NEW LAVENDER GROWERS

Choice of Site

Choosing a suitable piece of land is an important decision once you have decided to grow lavender commercially. Land that is free draining and facing north is by far and away the best. Lavender does not enjoy wet feet and may need to be planted on mounds in heavy and clay based soils. It needs to have access to all the sun that is available so vegetative shelter should not be high. It will do best with drier weather leading up to harvest so any irrigation used needs to be stopped at this point about 3 – 4 weeks before.

Plants need to be kept free of weeds and grass. Many weeds e.g. yarrow, contain essential oils as does the leaves and bark of eucalypts so all this material needs to be kept clear of the crop.

It is essential to obtain a soil test of the ground to be used, concentrating on the NPK balance and the availability of free lime and trace elements. Assistance is needed to interpret the results of this testing, as it is related to which fertilisers should be used, regardless of whether organic or chemical. Some growers have found that a careful light application of untreated wood ash is helpful to provide free lime and potash to enhance flower development. An initial application of lime is essential to obtain a pH of 6 – 6.5 as this will assist with oil quality.

Site Preparation

Most growers factor in weed matting when calculating the cost of crop establishment. A good quality UV stabilized matting around 900mm wide with 1800mm between rows gives good clear access for care/pruning and harvesting, whether by hand or machine. You could expect to get 15 – 20 years from a crop set up like this. Over a 10 year period the cost of hand/chemical/ machine weeding would be about the same as establishing the matting.

The ground to be used is best cultivated with a narrow tractor -driven rotary hoe up to 12 months before planting to eliminate grass and weed seed. If a slower growing herbage than grass between the rows is desirable, the whole ground can be cultivated. Cotula would be an example or elka rygrass which is slow growing could be sown.

The spacing of plants in the rows is critical to obtain the best hedge-like pattern of growth that is easiest to harvest – 500mm for angustifolias and 600mm for lavandins. If rosemary is also grown, a 900mm spacing is advisable. Use a sheetmetal template for planting with 80mm holes cut into it at appropriate

spacings with an additional pilot hole. The holes for planting can be burnt into the weed matting with a propane burner. A remote valve set up is needed (eg Benzomatic Trigger Gun) rather than the simple valve on a small gas bottle otherwise it will emit a flame of liquid propane. See photo. Keep the flame burning as it takes only about 1 sec to provide a hole that is heat sealed around the edge and will not fray in the future. Lift out a plug of soil through the hole using a bulb planter. Place the plant and then backfill with sterile material (potting mix or pea shingle) to limit grass and weed growth.

It is advisable to incorporate the initial fertilizer and compost into the cultivation process before the weed matting is laid. Subsequent application of fertilizer needs to be laid on the matting between the plants thus preventing the burning of plants as can occur when using nitrofoska blue with trace elements. If the weedmatting is not able to be laid near level there is a possibility that some of the fertiliser may roll or be washed off the matting. It is still accessible to the lavender roots under the matting. If this proves to be a major problem then a liquid fertilizer can be used.

Plant Choice

The choice of plants made for an initial trial test needs to contain at least 200 of the varieties chosen. If the trial oil sample proves acceptable, then you can proceed to a larger planting. Two important factors that need to be considered are the suitability of the cultivar for the site and the marketing potential for the variety chosen.

The lavandins (*Lavandula x Intermedia*) are often chosen for their high yields and strong fragrance. They include 'Grosso', 'Super' and 'Impress Purple' (41/70). The *angustifolias* or English lavenders include 'Pacific Blue', often grown for its high antiseptic content, 'Avice Hill' and 'Violet Intrigue'. There are quite a number of other varieties that can be grown. A list of other varieties that can be grown for oil in New Zealand can be found under Note 2 below. A number of lavenders have a PVR license on them. Check with the PVR website about details. These lavenders are patented and cannot be propagated unless you have a license from the person who holds the PVR. If in doubt, check with the PVR website for details. Fines for infringements are massive.

Cautions

Rabbits are very partial to young lavender and will dig it up to eat the roots. Repellent spray can be used as an interim measure but buried fencing is the best answer. Frost is the enemy of young flower heads so a mid to late spring pruning can be very helpful in providing a late bud break. Usually frost only affects some of the flowers on a plant but all of the flowers need to be pruned off so that the maturity of recovering growing tips is even otherwise you end up with a green note in your oil which is totally unacceptable. Young growing tips not affected by frost and cut off can be used as cuttings for new plants. Most varieties cut off in this way will grow again very quickly but 'Pacific Blue' needs to have all flower heads cut off within 24 hours to ensure regrowth in the current season to mature flowering stage again. In areas relatively free from hard frosts, pruning is normally done straight after harvest to ensure a maximum development of flower bearing buds for the next season. Aim to remove

at least one third of the plant in the pruning process so as to retard woody growth. With care of your plants in this way you can expect 15-20 years of oil production before replanting is necessary.

Harvesting

What is the best time to cut your crop is learned through experience and using your nose to determine whether or not the top notes are present in the oil. Wait until almost all of the flower buds are open, pick a representative head and crush it in the palm of your hand by rubbing it. If the fragrance is balanced with the top notes present then harvesting can begin.

Wait until all morning moisture has evaporated from the crop before beginning the harvest. Do the sniff check before commencing every time to be sure that you have got it right. A crop can be unfit and then an hour later ready. Aim to collect all the open flower heads with a minimum stem of 100 – 150 mm. Take great care to use harvesting equipment that is sterilized with a fungicide or metholated spirits. Place the cut flower into wool sacks taking care to leave the top flaps open and forming an air vent down the centre of the sack right to the bottom to avoid the build up of heat. Cut flower is extremely perishable and if not distilled immediately it needs to be spread out on the floor of a shed on sheets or tarpaulins to a maximum depth of 300mm. In this way it can be wilted for 2 – 3 days without any significant loss of oil. Check each day that there is no build up of heat. If heat is detected use a light fork to aerate the crop. Any tight bunches of flower that cook need to be discarded as their presence in the crop will adversely affect the entire volume of oil produced.

In seasons when the harvest is ready and it has rained significantly you need to wait 48 hours for all the components of the oil to be present in the flower again. If there has been a big dump of rain in the week before harvest and the flower is fully mature by your sniff test, the stems may still contain excessive moisture and extra care needs to be taken in the handling of the crop – spread it out over a wider area and provide good ventilation for the evaporation of stem moisture. Real care taken at this stage is essential for the production of quality oil without off notes. A dehumidifier can also be used if necessary.

Because lavender oil contains many chemical compounds in number way beyond what may be tested for, it can be compared to a rich fruit cake. The cake that needs to be kept for 3-4 weeks or more before it is eaten needs that time for the ingredients to blend. Lavender oil needs at least 4 – 6 months of maturing before an accurate assessment can be made of its quality. Some oils need even 1 – 2 years of storage in ideal conditions before their potential quality emerges.

Oil Storage

Lavender oil needs to be stored in full dark bottles (brown or blue) in a cool/cold place out of reach of light. One of the things you need to check for before storage is the presence of moisture in the oil. Sometimes this can be seen as globules of water in the bottom of a bottle or mere cloudiness in the oil. Moisture is easily removed by placing containers in a freezer for 24 hours either with the top removed or at least loosened. The water present in the oil freezes inside the bottle on the glass and as fine icicles in the oil. Pour the oil through a filter to remove the floating ice. Place the resulting oil into a

new clean dry bottle. Check the bottle again later to make sure that all the water has been removed. If necessary repeat the process again.

Oil Analysis

It is advisable to use the quality assessment services provided by the NZLGA to its members as this is indispensable for your own knowledge and marketing. Two services are provided:

1. Gas chromatograph assessment carried out by Dr Noel Porter of 33a Merrin Street, Christchurch, 8042, phone 03 358 4393. Send cultivation/harvest notes and a 10 ml sample when the secretary of the association informs members it is required.
2. NZLGA runs an oil competition, usually each year, with a number of different categories for different types of oil. The competition provides a good indication of how the quality of your oil compares with other growers and is well respected by the industry for marketing and export. Again, the secretary announces when entries are required.

This booklet should be used in conjunction with the following resources available for purchase or loan from the association library to members:

1. Lavender – A growers guide for commercial production, Porter and McGimpsey. It is advisable to own your own copy for reference purposes.
2. The effects of flower maturity and distillation time on the yield and quality of lavender and lavandin oils, Porter, 2005.
3. Lavender Oil Composition 1999 – 2007, Porter and Associates, 2009.
4. The Genus Lavandula, Upston and Andrews, 2004.
5. Lavender – the grower's guide, McNaughton, 2000.

Notes

1. Many of the members of the NZLGA operate their own distilleries and some of them are willing to distill for others when asked. Robert Livesey, Keith Brown and Susi White have indicated their willingness to act as consultants for new growers. Their details are found on the association website. www.lavender.org.nz

2. The following cultivars are available in New Zealand and are known to be grown in New Zealand or Australia primarily for oil production, dried rubbings or culinary use.

Lavandula angustifolia

	oil	Dried rubbings	Culinary use	Comment
Avic Hill (PVR)	*	*	*	Prefers distinct seasonal changes experienced in the South
Egerton Blue	*	*	*	
Maillette	*	*	*	
Pacific Blue	*	*	*	Grown throughout New Zealand
Swampy	*	*	*	
Tasm	*	*	unknown	
Twickle Purple	*	*	unknown	
Violet Intrigue (PVR)	*	*	unknown	PVR
Waiuku Blue	*	*	*	Tolerates humidity well. Open growth habit makes harvesting tricky.

Lavandula x intermedia (Lavandin)

	oil	Dried rubbings	Comment
Abrialii	*	*	
Bogong	*	*	Also known as 'Miss Donnington'
Impress Purple	*	*	41/70 also known as 'Arabian Night'. 40/70 appears to be a more robust plant with darker violet flowerheads
Grosso	*	*	Most commonly grown Lavandin in New Zealand
Gros Bleu	*	*	
Hidcote Giant		*	Big, fat flowerheads give huge quantities of rubbings
Julienne Blue		*	Dark-flowered. Holds colour well when dried.
Rocky Hall Margaret	*	*	
Seal		*	
Sumian	*	*	
Super	*	*	Plant C. Commonly grown Lavandin across New Zealand. Will tolerate clay soils.
Yuulong	*	*	

This list is by no means exhaustive as there are numerous alternative cultivars available.

3. The planting template and propane burner



4. Tuition in educating your nose in the finer points of oil sniffing can be provided to new members. This information is vital to assist quality oil production.

Compiled by Russell Rofo - 2011