

Essential Oil Distillation WV Herb Growers Record of Photographs in Final Report

Page 1. **The Essential Oil Distillery.** Clockwise: Carrie Liller, 2001 Summer Apprentice, Jesse Zach and Judith Vojik 2000 Summer Apprentice (all WV Wesleyan College Students) examine the new Essential Oil Distillery at La Paix Herb Farm. Distiller from left to right: Retort with temperature gauge Bird Beak, Condenser Judith holding Separator.

Placing plant material in Retort. Evan Tingler, extraordinary gatherer of Autumn Olive blossoms, prepared to dip pillow case of blossoms in the Retort. After devising this method of enclosing plant material (in order to keep retort cleaner and easier to clean), I found that similar, but much larger, cloth bags are used in France when distilling.

Page 2. **Preparing Beds for Lavender.** Beds were prepared ahead in early Spring for the plugs which came in late May. Beds were double dug after weeding, dolomite lime (about 5 lbs. per 5' x 10' bed) placed in bottom. Compost of about 2 inch thickness was placed on top of lime, then the soil. All covered with black plastic weighted down by rocks. Six beds were prepared this way; thirteen more beds were needed when plugs came. They were prepared by weeding and digging lime down about six inches. Wisteria in bloom in middle ground of the "Big Garden" at La Paix where all plugs were planted in 2001.

Plugs Shipped in Boxes. Boxes of lavandin, lavendula and lemon balm plugs as they arrived from Hillcrest Nursery in Maryland packaged as shown. Catnip in foreground of potting bench.

Sample Flat of Lavandin. Each flat of lavandin or lavendula was labeled. This is how the plugs looked upon unwrapping from boxes in middle photo. The type shown here is Dutch lavandin. Tops were bent over but not harmed. Some plugs were individually wrapped in netting. I saved the plug trays for future propagation.

Page 3. **New Planting of Plugs.** This new planting of plugs shows Grosso in the foreground and in the back two beds. The bamboo set up around the back bed on the left was to deter the dogs from running through that bed on way to entrance. I found on my trip to Provence that Grosso is the type grown 80% of the time in France today. Also called "Fat Spike" or "Dilly, Dilly" it's origin is the Vaucluse District of France, about 1972. Hardiness to Zone 6?, tall, lavender-blue flowers, 20 to 37% linalyl acetate, 27 to 32% linalool. Provence is a hybrid of Dutch and Augustifolia and was propagated to withstand the bacterial wilt which practically wiped out the lavendula then growing in France at the time.

New Planting of Seal type Lavandin. This is how plugs looked a few weeks after setting out in garden. Signs were made, using the information from Art Tucker's book, The Big Book of Herbs, to describe the various types of lavandin and lavendula. This is Seal, sometimes known as Seal 7 Oaks, Origin: Miss D. G. Hewer, Hitchin, England. Introduced by the Herb Farm, Kent England, pre-1935. Hardiness to Zone 6?, tall, lavender-blue flowers. 41% linalool, 26% 1,8 cineole (eucalyptus-lavender).

Page 4. **Two Photos of Lavender/Lemon Balm Growers Overview Meeting, July 2001.** About fourteen potential growers came from all over the state of West Virginia to see the lavender plugs growing a La Paix, hear about the Project, see a distillation, and decide whether to become a part of the project in 2001. Eight of these participant/observers became growers in 2001, and two more growers were recruited at the Sustainable Fair 2001 demonstration and workshop on July 29th. One of these came from Pennsylvania (29 miles north of the WV line) and the other from Lewis County, where La Paix Herb Farm is located. Reporter Dmitri from WBOY-TV came to view the event which was featured that evening on the News program. Dot Montgillion, in the red plaid shirt taught and supervised propagation of lemon balm plugs. She has been the Treasurer of the WV Herb Association for ten years.

Page 5. **Myra poses in Provence Lavender Field.** Backlit and Bountiful. Tour of lavender, clary sage and other fields sponsored by the Australasian College of Herbal Studies. Course featured chemistry (too much), propagation of essential oil plants and touring the blooming fields of lavender and various distilleries in Provence, France. Note the rocky soil, flat land and oak trees in the background. Oak is often planted on the boundaries of the lavender fields.

Small Organic Lavender Farm. Rows of Grosso Lavandin on slight hill. Much of the lavender grown in France is kept weed free by spraying herbicides in between the rows. The rows are planted as illustrated to take advantage of a large harvesting machine (usually shared among several contiguous farms) which harvests three rows at a time. The W.V. project is emphasizing organic growing and use of various mulches to contain weeds between rows because distilling herbs would make herbicides/pesticides even more powerful and probably dangerous.

continued

Page 6. **Distillation Building: Small Organic Lavender Farm, Provence, France.** Designed and constructed by the owners. The boiler is in the left side of the building behind a wall and the steam is piped into the return shown in the next photo. A spent bail is shown on the crane on the left side in front of the door to the distillery building. Air circulates freely over the sage which is strewn over the concrete floor below the distillery. Most herbs are allowed to dry for a day or so before distilling, and some are also cut up in order to release more essential oil upon distillation.

Close Up of Retort and Condenser. Class members cavort on the floor which is raised above the retort and condenser. Sage is drying in the foreground.. One of the owners of the farm and distillery is seen looking down on the left hand side of the photo just to the left of the man in the striped shirt. I consulted Robert Sidel of The Essential Oil Company (my consultant on this project) about the possibility of distilling in the winter. He said that as long as you could keep the condenser at no less than 135 degrees, you could do it. I will put plastic sheeting around the patio which contains my distillery this winter - and would like to distill yarrow (which has been dried thoroughly first this summer in preparation). Basil, Rosemary and sage can also be distilled this winter.

Page 7. **Spent Bail of Lavender.** This is from the small family distillery on page 7. Most distilleries are owned by large corporations and are much larger edifices. These corporations (about five) buy most of the essential oil in France and they dictate from year to year what type of lavender will be processed that year. They often can squelch any new types propagated by simply not buying. Farmers often tear up their mature plantings and replant with the current corporation preferred lavender. The spent bale shown is small compared to some which weigh over 3 tons. What to do with the spent material? Well, in France, they are using the spent lavender like we use straw in straw built houses. It is more condensed and probably smells really good - would also be less susceptible to insects.

Shop in Provence Town. Shops, streets, homes, architecture and shutters of Provence are so artistic and beautiful. It would be lovely if Americans saw beauty in individual shops and stores. It is not expensive, but reflects the values of cleanliness (except for the public toilets which are atrocious and vile) and beauty which lure tourists to Provence. Farmers are now making more money from tourists bouncing through their lavender fields and taking photos, progressing on to the owner's home which always has a shop of goodies - then in selling lavender itself. Katherine Adam states that growing lavender in the United States is primarily an eco-tourism endeavor - tourists are the most profitable part of the farm operation.

Page 8. **Medicinal Garden at La Paix Prepared for Spring 2002 Transplantation of Lavandin.** Beds have been prepared by weeding, cultivating, liming, and covering with newspapers or cardboard held down by rocks and pulled weeds. Rosemarys in pots are now in the greenhouse for the winter. In the background is the Feng Shui garden (built as a result of research on deer deterrents in another SARE grant). The soil in this garden is probably too rich for lavender as it may contain too much bacteria. Soil is very high in nutrients, has pH of about 6.5, organic matter 12%. Lavender prefers well drained, sunny (at least 8 hours), rocky soil with a pH of 7 or above.

South Facing Hill Prepared for Spring 2002. Slight hill promotes drainage and is often seen in France for planting lavandin. Newspapers used for cover as there are many daffodils under the soil which have to be accommodated (daffodils will come up through newspaper). They bloom early and die back so that I will be able to place lavender correctly in the Spring. Hops over greenhouse left foreground. Some tree branches will have to be trimmed.

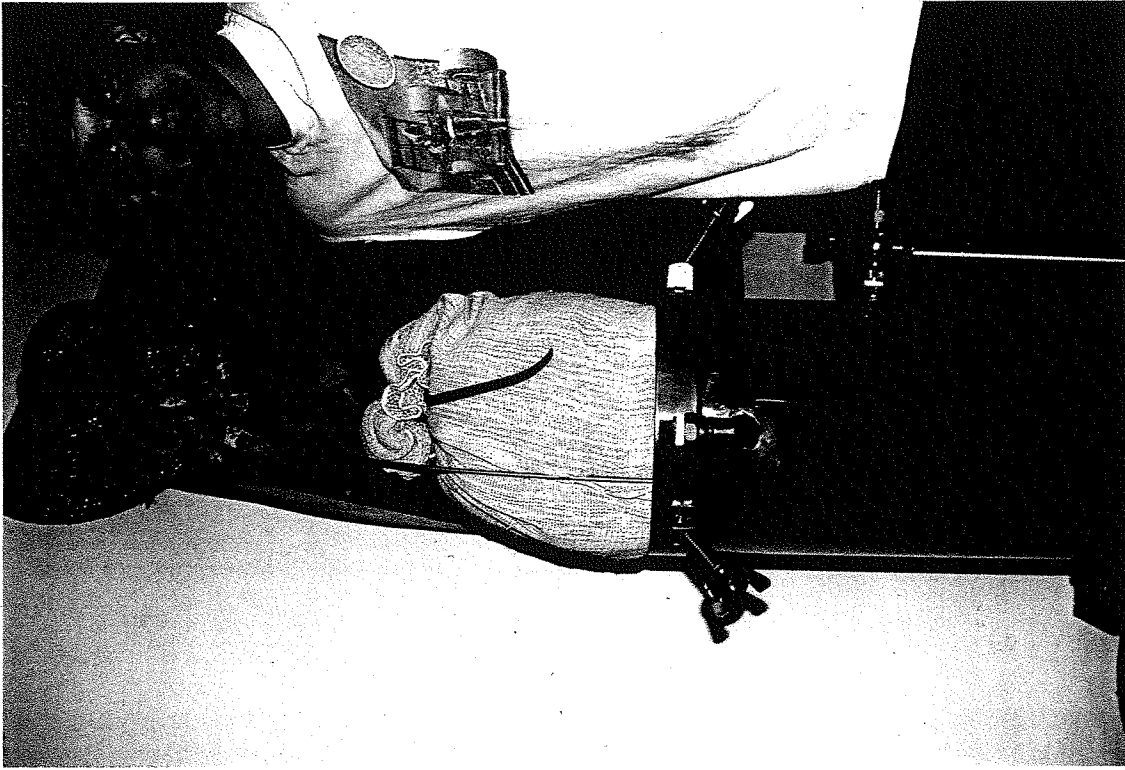
Page 9. **Distillery Building at La Paix.** A patio was built in July to accommodate the distiller after the steam from it hurt some books in the Shop and the water on the floor became a problem. Patio's floor is concrete. In France, the set up is similar to this one, although much larger. This photo shows Ann Romance of Green Heron Farm holding Susan Catty's book on Hydrosols, The Next Aromatherapy while awaiting the distillation results of her lemon verbena harvest. Cass Nelson-Dooley, August/September apprentice, waits patiently while Karen, Ann's friend, reads the Propagation Farmer/Grower manual I assembled from internet web sites. This Manual was given to the LavenderLemon Balm Farmer Growers when they received their plugs in early August.

Page 10. **Maillette, highly recommended lavendula, succumbs to Pithium Wilt.** Those showing gray may not survive this winter, according to Art Tucker, who toured the gardens on October 6th. Due to lack of air circulation, this shows how much more vulnerable lavendula is than the lavandins growing (Grosso, Seal, Dutch, Goodwin Creek Gray, etc.). Although the lavendulas (true lavenders) have the essential oil aroma prized in perfumery, the lavandins, with their harsher scent, are used in soaps, cleaning agents and cosmetics.

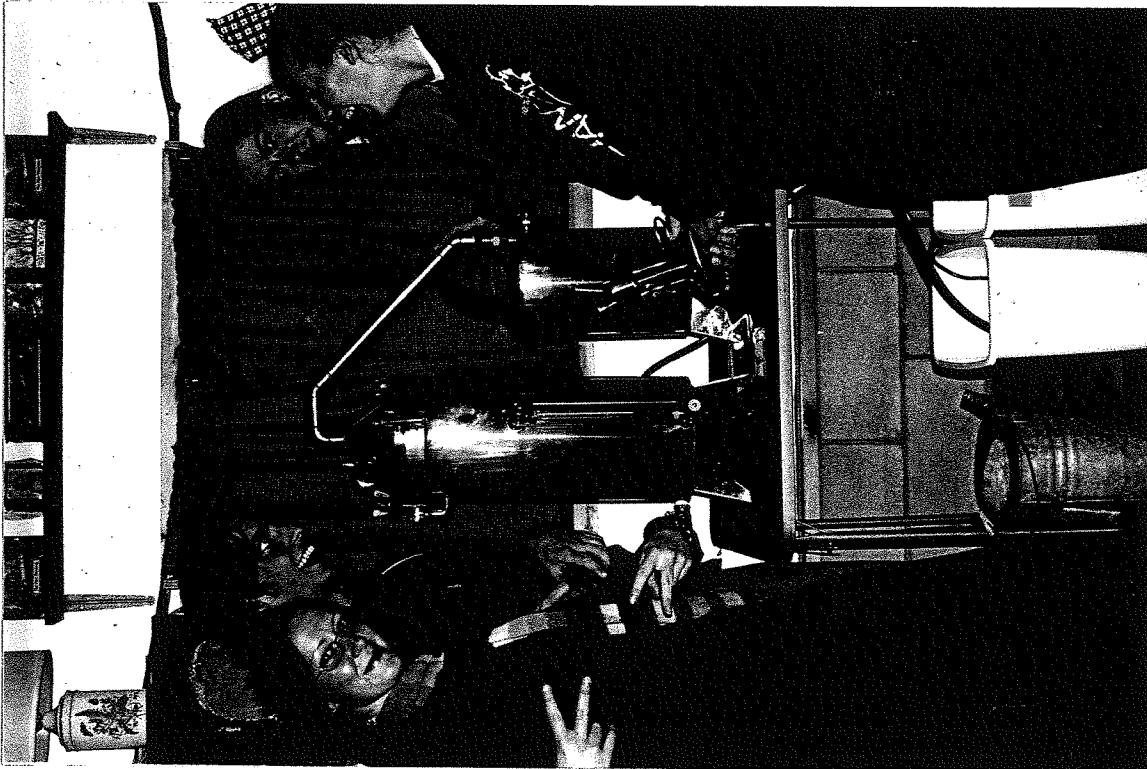
Plug Growth by October, 2001. In the foreground is Grosso, then Sage and Maillette. Background left is Dutch and Goodwin Creek Gray and Seal. To the left of the arbor, the smaller plants are Jean Davis, the only lavendula other than Maillette. All plugs are crowded, hard to count, and over 400 must be transplanted in the Spring when they are still dormant. Curved bamboo and re-may cloth will be placed over half the beds to determine winter survival needs.

Page 11. **208 Plugs Prepared.** Dutch or Fat Spike cuttings becoming plugs in Greenhouse. Started 9-19-2001 (root day), dipped in willow water, planted in potting soil, all 208 plugs (Grosso, Seal, Dutch and Goodwin Creek Gray) are still living and rooted this date (Nov. 3, 2001). Bottom watered only. In greenhouse with Rosemary, sweet marjoram and five mother plants (Grosso, Seal, Dutch, Goodwin Creek and Jean Davis).

Two More Areas for Spring 2002 Planting of Lavandin. Amount of sun per day studied for weeks before decision made on location as lavender needs a great deal of sun. Cardboard boxes from liquor store flattened to cover and kill grass underneath which was first limed. Weeding materials keep boxes from flying.



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