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Lavender Oil Quality – Notes from the Experts

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To understand the quality of oils, you need to understand the main components of a lavender essential oil. The two main components of both *angustifolia* and *lavandin* essential oils are linalool (floral scent) and linalyl-acetate (fruity scent). They make up on average about 60% of *angustifolia* oils and about 40-45% of *lavandin* oils, but different cultivars produce different proportions of each. There are several other components that influence the oil scent including ocimene (fruity, citrusy, green, sweet basil) at around 5-10%, 4-terpineol (mild woody, musty, earthy) at around 5-10%, and caryophyllene (spicy, musky) at 3-10%. Then there are 3 components that are much higher in *lavandin* than *angustifolia* oils and provide a much stronger scent: camphor (Vic's Vaporub scent) which is around 5-7% of *lavandin* oils and <1% of most *angustifolia* oils, eucalyptol (eucalyptus scent) which is 10-20% of *lavandin* oils and 1-3% of *angustifolia* oils, and borneol (pine, woody, balsamic scent) which is 10-15% of *lavandin* oils and 1-3% of *angustifolia* oils. Overall, these three components give *lavandins* their more medicine/personal care product scent. There are numerous other components of the oil that contribute more subtle differences in scent.

Other "off" scents can be introduced through oxidation (oxygen exposure) of the oil, which often produces a more chemical smell reminiscent of oil-based paint or turpentine. A scent of freshly cut hay can be introduced if the plant material is cooked during distillation, such as boiling of the stems at the bottom of the still, or late in a run when most of the oil has already been extracted. Similar "green, hay" scents can also be due to too many leaves being included with the flowers during distillation. Growing, harvesting and distillation practices can make a big difference on the quality of the oil.

Oil quality is highly subjective. The important thing for growers to realize is that the customer is the ultimate judge. A good quality oil is anything the customer wants to purchase. However, if one farm's oil is obviously inferior to another, that may be reflected in their sales over time, so it is good to know how your oil stacks up against other farms and how oil from one cultivar compares to another.

Overall, the judges thought most oils from both categories were good and definitely saleable. However, some of the *angustifolia* oils had an off scent, and the purpose of these competitions is to hopefully learn where those come from so oil quality can be improved across the industry. The most common "off" scent in the *angustifolia* oil was an oil-based paint scent. This is most likely due to oxidation of the oil either on the plant before distillation (e.g. from late harvest) or exposure of the oil to oxygen or light after distillation. Some off scents could mellow over time with aging, but not if it is due to oxidation. There were other *angustifolia* oils that were not "off" but had very unique scent profiles. One oil had a strong brown sugar, butter, caramel scent. This oil was thought to be very high quality and a unique selling feature, but did not match the typical lavender scent. As a result, it was not a winning oil, but because of its uniqueness, could end up selling even better than a more typical oil. Other oils were noted as being less sweet and more green, earthy or spicy. These may be higher in some of those other components like ocimene. One oil had a strong black pepper scent. Looking at the cultivar used and comparing it to previous scent evaluations of lavender buds, it was clear that the cultivar used, 'Essence Purple', was responsible for the unique scent.

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The lavandin oils were high quality across the board with fewer comments about potential oxidation. A high quality lavandin oil was thought to have the typical scent of camphor, eucalyptol and borneol, but nothing overpowering the floral and fruity lavender scents. There was less variation in this category, probably due to most growers using either Grosso or Phenomenal, which are very closely related (if not identical in some cases). The scent of raw pumpkin was noted in several of the oils, which may be a combination of the fruity linalyl-acetate and the more herbaceous components like ocimene and borneol.