Understanding the Need for Irrigation in Lavender

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It is true that lavender is adapted to a Mediterranean climate and can survive with minimal rainfall. However, growers often misinterpret this to mean that they do not need to irrigate lavender beyond the establishment year. There are several differences between wild plants in the Mediterranean and your lavender crop including:

1. Wild plants in the Mediterranean can have root systems that extend several metres into the soil in all directions to access water. In Ontario, root systems are often much less extensive because repeated soil flooding and high water tables over winter can kill roots lower in the soil profile, meaning plants can run out of moisture much more rapidly.
2. Wild plants are often spaced widely because seedlings that grow too close to an existing plant's root system will not be able to access sufficient moisture to survive. Ontario fields are much more crowded, meaning there is much higher competition for moisture.
3. Lavender growers often have grass between the rows of lavender which competes with the lavender for water and nutrients. There is much less competition in the shrublands of the Mediterranean.
4. Nobody is trying to make a living off of wild plants. Plants in the wild will still bloom beautifully (in most years) but yields are likely much lower than what would be profitable for a grower.

Lavender leaves are well adapted to dry conditions because the hairs covering the leaves greatly reduce evapotranspiration (water loss from leaves). This means that lavender may require considerably less water than most agricultural crops. However, the crop grown between your plants (e.g., grass for most growers) is much less efficient. Every time your plants get moisture stressed, plant growth is effectively stopped. This is because the stomates, which are pores on the leaves that allow for air exchange, close under water stress to prevent moisture loss. This also blocks the uptake of carbon dioxide which is the essential building block for glucose. As a result, there could be several hours every afternoon when sunshine is at its peak that your plants are not building new roots or shoots, and bloom potential for the following year is reduced. The difficulty with lavender is that it can look perfectly fine even when severely water stressed, except during bloom when flowers can droop.

Growers are often worried that watering will cause disease issues in lavender since lavender does not like wet feet. It is true that excess water at any time of year can lead to root death and/or root disease. However, irrigation when the soil is dry is not going to lead to soil saturation for extended periods, which is the real cause of root death.

Remember that it usually takes 25 mm (1 in.) of water for a good watering which equates to 250,000 L per hectare or 100,000 L per acre. Most crops require this amount of water every 5-7 days in the peak of the summer. Lavender may only require this every 10 days. Your 500 L watering cart is probably not going to cut it unless you are prepared to run 20 tanks per day per acre every day of the summer (in the absence of rain).

Remember that there is a difference between surviving and thriving.

More information can be found here:

Small Plot Irrigation

Dealing with Moisture Stress in Lavender