

How to Grow Lavender: A curriculum for lavender farmers

Module # 4 Managing your Lavender Crop

Presented by:

Dr. Lily Calderwood, University of Maine



MICHIGAN STATE
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A collaboration of lavender growers and land-grant universities with funding from the USDA's North Central Regional Center for Rural Development



Module 4: Agenda

Section 1: Site Selection + Organic Decisions

Section 2: Spring

Section 3: Summer

Section 3: Fall



Site Selection

Well draining soil!

Well draining soil!

No Ponding. No Clay.

Soil textures:

Gravel

Sand

Sandy loam

Gravelly loam

pH 6.7 – 7.3

Take a soil sample!

Visit your local Extension Office



Finding Your Soil Type

<https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm>

- Google: Web Soil Survey
- Download: SoilWeb app
- Contact your local Extension Office



Landscape Considerations

Is the planting area south facing?

What is the direction of the prevailing wind?

Does the land slope?

Where does water pool?

Where does water drain?





Quality Depends on Crop Management

Factors impacting lavender quality:

Plant Stress impacts Essential Oil Content
Positive or Negative?

1. Nutrients available to plants: fertility
2. Pest Management
3. Water availability: irrigation
4. Harvest timing



Quality Depends on Location

Lavender is native to the Mediterranean

Now grown across the US

Ontario, Canada (av. 31" rain/year)

Appleton, Maine (av. 42" rain/year)

Palisade, Colorado (av. 11" rain/year)

Springfield, Oregon (av. 45" rain/year)

France (av. 25" rain/year)

Adapted to long, dry, hot summers & well draining soil



Considerations for Certified Organic

- Do you have the market?
Lavender may not get a higher price for organic
- There are state and national certifiers
- Organic Materials Review Institute (OMRI)
- Telling your story is valuable
- Marketing is critical



How to start the certification process.

- 3 year transition period
- 100ft buffer between conventional and organic
- Talk with another farmer in your area
- Call your state certifying agency
- Paperwork and fees involved



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1. Sourcing Plants

Nurseries that carry lavender:

Richter's Herbs (Ontario)

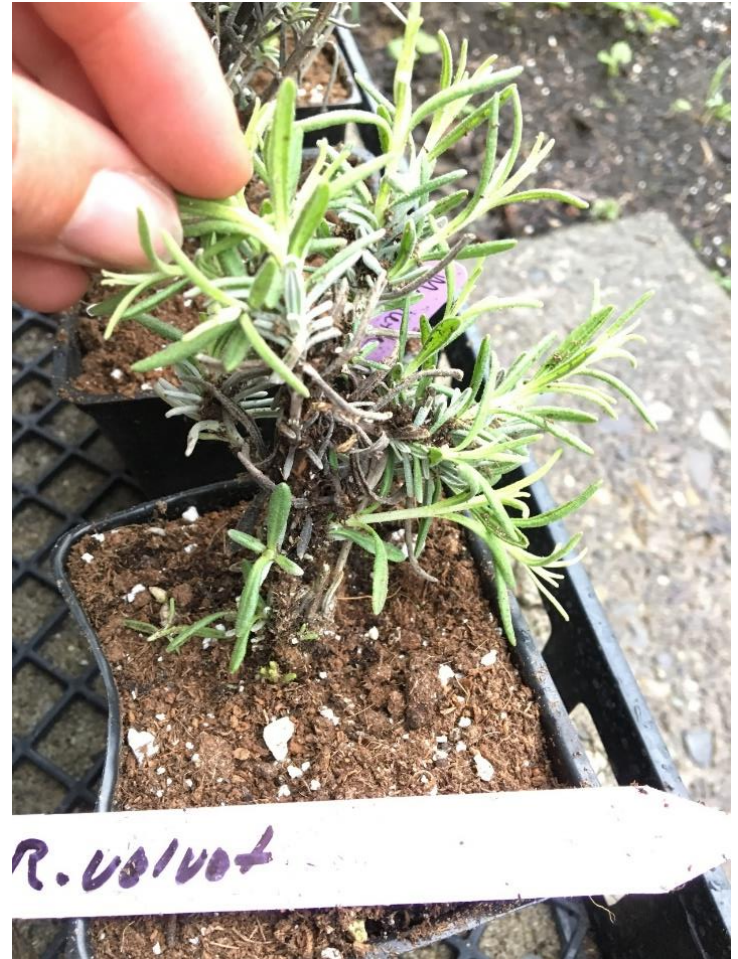
Peace Tree Farm (PA)

Silverleaf Greenhouses (NY)

Joy Creek Nursery (OR)

Van Hevelingen Herb Nursery (OR)

Victor's Lavender (WA)



Variety/Cultivar Selection

Essential Oil SARE Research Trials

Lavender Cultivars	Species	Source
Betty's blue	Lavandula angustifolia	Joy Creek Nursery
Fiona English	Lavandula angustifolia	Joy Creek Nursery
Twickle Purple	Lavandula angustifolia	Joy Creek Nursery
Hidcote	Lavandula angustifolia	Mountain Valley
Phenomenal	Lavandula x intermedia	Northcreek Nursery
Ellagance Purple	Lavandula angustifolia	Silverleaf Greenhouses
Folgate	Lavandula angustifolia	Victors
Maillette	Lavandula angustifolia	Victors
Melissa	Lavandula angustifolia	Victors
Royal Velvet	Lavandula angustifolia	Victors
Sashet	Lavandula angustifolia	Victors
Buena Vista	Lavandula angustifolia	Victors
SuperBlue	Lavandula angustifolia	Richters Herbs



Either Spring or Fall Planting

Plants arrive in boxes, sometimes blooming...



Insect Pest: Two Spotted-Spider Mites

1. Can arrive on plants from nurseries
2. Thrive in dry, dusty conditions
3. Spraying pyrethrin will only make it worse!
4. Once they are out in the field, natural predators will eat mites.



Two-spotted spider mites on Hidcote



Can you plant lavender from seed?

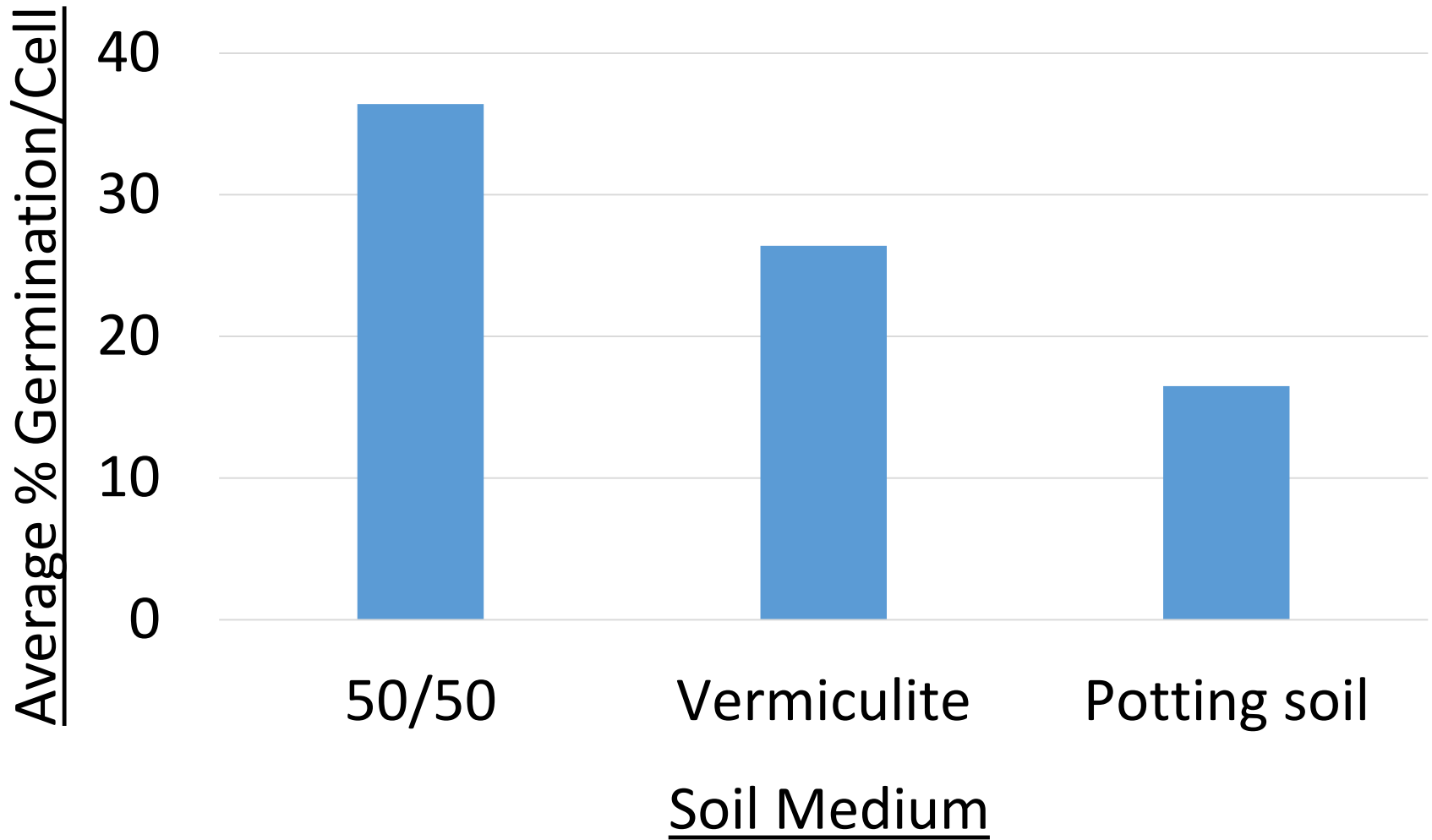


Seeds = Variability
If you want a cultivar you can't get it from seed.

3 weeks to germinate
without heat

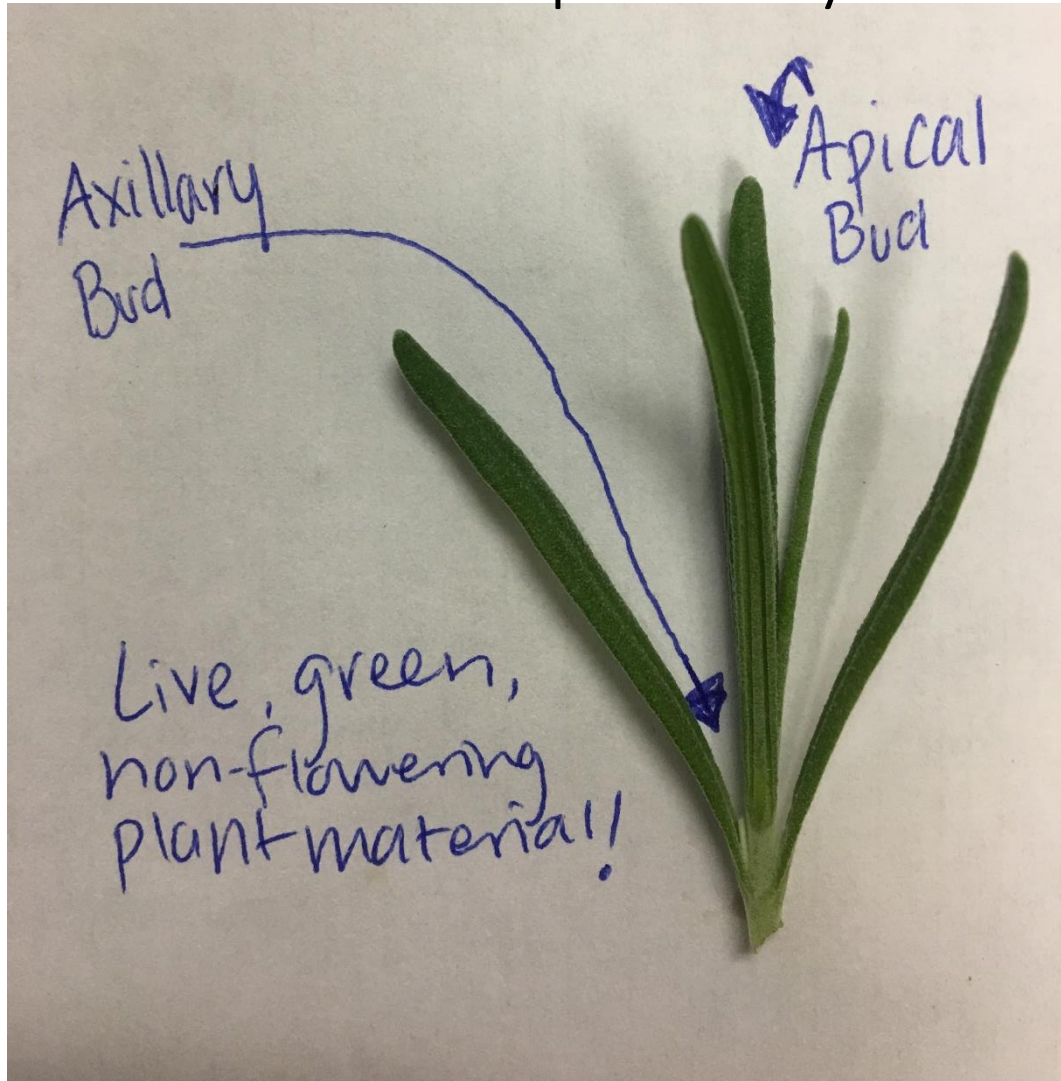


Lavender Seed Germination Rate

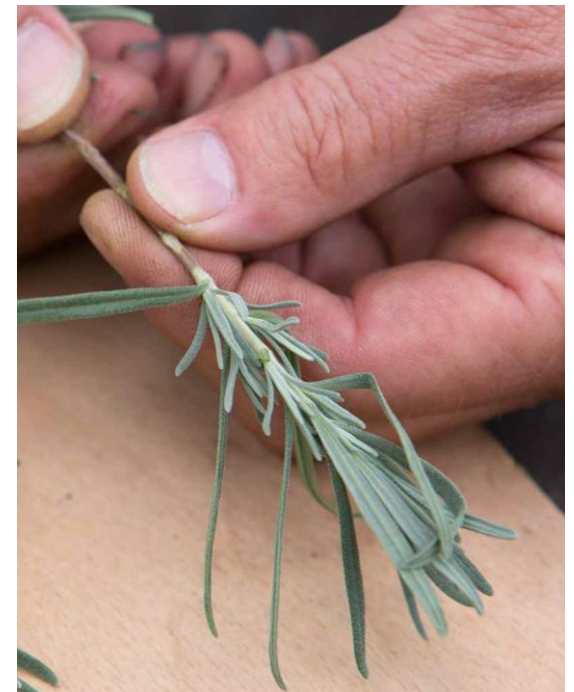


Propagation: easiest in summer

1. Cut below top axillary bud



2. Cut side shoots
New growth



Option 1: Propagate right into ground – June/July



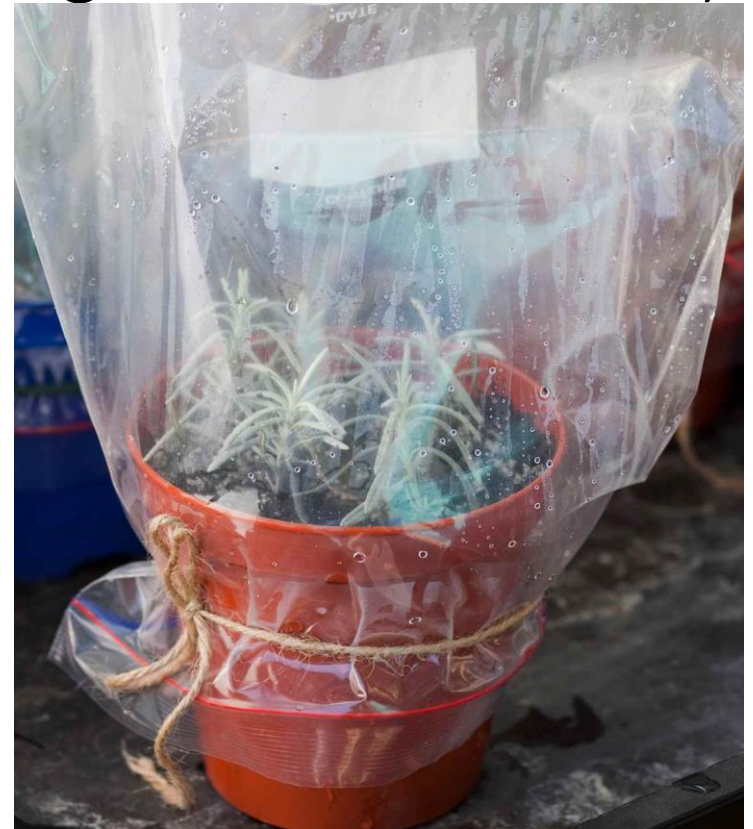
Option 2: Propagate into Trays/Pots

Well draining medium:

(compost + vermiculite or potting soil + vermiculite)



Dip in Rooting Hormone: Hormonin1



Fog tents may or may not work.



Plant 3-4 months later

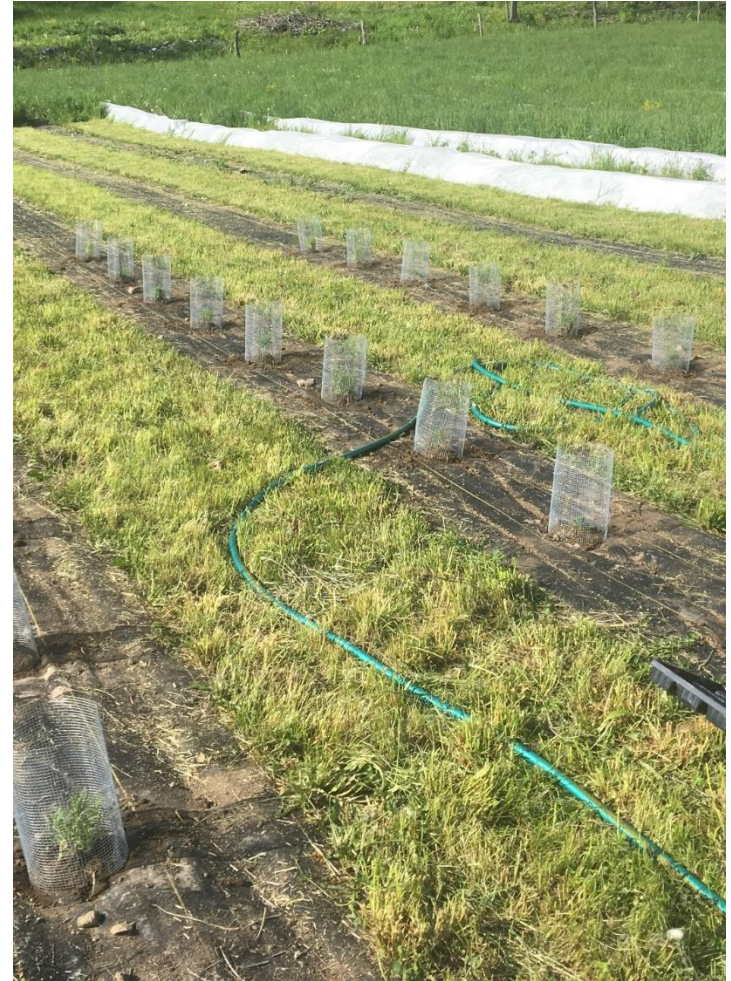


2. Bed Preparation

Lime to get pH up to 6.5-7.5

Black row fabric:
weed control
heats the soil up faster

Mesh wire netting:
Vole and mice protection?



3. Irrigation

Do you need irrigation?

Set up irrigation before planting.

Drip tape

Do not overhead irrigate



4. Plant

Planting Time Depends on Your Location

Ideal conditions for planting:

- Rains or irrigation follows planting
- Not too harsh a winter coming up

Lavender plugs should be set higher than soil level.





4. Manage plant growth

1. Clip buds off of first year
a. Promote root growth

2. Weed management!
a. Black fabric
b. Weed whack and mow
c. Increase airflow



Much better!



NORTHEAST
SARE



Sustainable Agriculture
Research & Education



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Bud Break/Flower Development

Location and Cultivar Dependent

Northeast & Northwest:

English Lavender blooms: June 15th

Hybrid blooms: **Early July**

In Oregon, lavender festivals are July 13-15.

When do buds form in the
Southeast and Southwest?



Bloom Group 1: Spanish Lavender (*Lavendula stoechas*)



Yellow, Spanish, French

Ornamental, hedge types

Gardens and Landscapes

NOT for OIL

Early bloomers

Source: Mountain Valley Growers



Bloom Group 2: English Lavender

(*Lavandula angustifolia*)



Vera, Munstead, Hidcote, Jean-Davis

Prized for their sweeter fragrance
(less camphor)

Good oil quality,
But NOT as high yielding as Lavandins

Bloom Late Spring, Early Summer

Blooms longer in cool climates

Good cut flower but stems can be short.
Different colors! White, green, pink, blue

Source: Mountain Valley Growers



Bloom Group 2: English Hybrids/Lavandins (*Lavendula x intermedia* cv. Grosso)



Prized for high yielding oil

Lower oil quality to some

Blooms last in July- August

Long stems for cut flower
-Mostly purple and gray

Cultivar: 'Phenomenal'

Grappenhall, Provence, Grosso, Dutch Mill, Abrialii, Seal

Source: Mountain Valley Growers



Harvest Timing

What is the end use?

-Different opinions

-Make observations of
25 % bloom, 50%, 100%



Harvesting for Oil

- A. Oil content peaks at full bloom.
- B. Begin harvest for oil when each spike has 2/3 of the buds open.
- C. In hot conditions, volatile compounds in the oil can be lost to evaporation

Begin by using an EssenEx or similar home microwave distiller.



Harvesting for Fresh and Dried Bouquets

- A. You don't want to harvest cut flowers at full bloom. Petals will dry and crumble apart.
- B. Begin harvest for cuts when each spike has 1/3 of the buds open.
- C. Do NOT harvest when plants are wet. Harvesting mid-morning seems to improve quality.



Insect Pest: Spittle bugs

What does it do?

- No bloom from those spikes
- Deforms buds

This insect appears to prefer 'Provence' over 'Grosso'

Only a few is OK.



Insect Pest: Spittle bugs

Tarnished plant bug (*Lygus lineolaris*)

Wide host range (Strawberry, Apples, Ornamentals)



Plant Bug and Froghopper Management

1. Control weeds in April when **nymphs** are present in edge weeds
2. Becomes a pest on the first flowers... weeds and cover crops
3. Incorporate cover crops before they flower (especially legumes)
4. Natural enemies feed on **nymphs**
5. Chemical sprays



Know Your Friends!



Minute pirate bug



Spider



Damsel Bug



Big-Eyed Bug



Lavender Diseases

Phytophthora (root rot)

Pythium (root rot)

Sclerotinia (white mold)

Botrytis (leaf mold)

Septoria (leaf spot)

Xanthomonas (leaf spot)



Leaf Yellowing is Common



Septoria: Leaf Spot Disease

Limited in arid regions



Nitrogen may Decrease Leaf Spot Diseases

Preliminary Data Suggests:
70-100 lbs N/acre
3 split applications



Healthy Plants are Less Susceptible to Pests!



Phytophthora (*Phytophthora nicotianae*)



Lavender infected
with
Phytophthora spp.

APS image
collection



Phytophthora



Not Phytophthora



Vs

.



Agdia Phytophthora Tests



Phytophthora Management

- Well draining soil!
- Do not over irrigate
- Rootshield Plus may help

USLGA on Phytophthora

<http://greatlakeslavendergrowers.org/wp-content/uploads/2017/09/Phytophthora-Root-Crown-Rot-Disease-final-2016.pdf>



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Continue to Manage Weeds



Weed Management Options

Mulch

Full landscape fabric

Row landscape fabric

Pebbles around plants

Crushed oyster- gives plants Calcium

Dewit company sells:

- Thinner= landscape fabric + mulch on top
- Thicker sun resistant ground cover



Winter Damage

- Snow load
- Fluctuating temps
- Spring wind
- Wind breaks





Pruning and Winter Protection



Pruning Opinion 1

1. Prune hard before Labor Day
(or 6 weeks before first frost)

Leaves re-grow before the first frost.
(leaves shoot from woody growth below)

Advantages:

- A. Plants stay small, compact
- B. High yielding
- C. Plants produce for a long time
- D. Less wood develops



Pruning Opinion 1

How low do I go????

Look for very small leaf buds close to the ground.
Cut just above them.

English lavender cultivars:

- Seem to be more resilient to hard pruning
- Mature plants can withstand being cut to the ground (at 4-5 yrs old)

Intermedia hybrids:

- Less tolerant to hard pruning
- Can withstand pruning just above lower leaf buds



Experimental Pruning (do not recommend)

Exploration of less aggressive prune

Prune in September and December

Cut 1 inch above the wood



Disadvantages:

- A. End up with larger plants
- B. Leggy and woody
- C. Have to replace plants more often



Do NOT do this in December.



Pruning Recommendation at this Time

1. Prune hard by Labor Day
2. Cover plants depending on location

Can you prune in the spring?

Some farmers are trying in the Northwest



Covering Lavender Plants; Recommended in the Northeast



76" #10 gauge steel hoops from Johnny's



Silos: Another way to hold fabric above plants
AND protect against snow load, voles, and deer



Row Cover Thickness

Thicker cover the better but:

more expensive

thicker they get the higher risk of disease

1-4 oz/ft² white fabric depending on your location

Hoops from Johnny's: 76" #10 gauge steel
(100 for \$122)

Fabric from Gardener's Supply:
6' x 50' (\$20)



Uncover
Upstate NY:
May 15th

Less cold tolerant
cultivars:
Grosso and Twickle



Additional Resources

United States Lavender Growers Association (USLGA)

USLGA on Phytophthora

<http://greatlakeslavendergrowers.org/wp-content/uploads/2017/09/Phytophthora-Root-Crown-Rot-Disease-final-2016.pdf>

Ontario Ministry of Agriculture (OMAFRA)

<http://www.omafra.gov.on.ca/CropOp/en/herbs/lavender.html>

Lavender; The Growers Guide by Virginia McNaughton

