



Brian A. Krug

Greens Production in Greenhouses

 University of New Hampshire
Cooperative Extension




- Bench Top Production
- Hydroponic Production

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Cooperative Extension

Bench Top Production

January	February	March	April
May	June	July	August
September	October	November	December




Does it make money?

Media

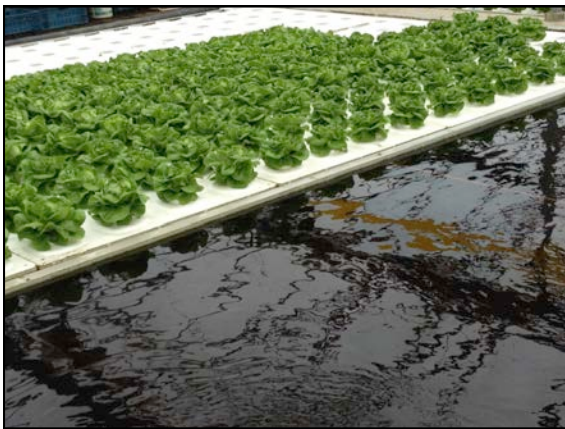
		Profit
Fort Vee mix	\$9.15	-\$565
Peat + Osmocote Start 12-17-11	\$8.26	-\$80
Living Acres compost	\$6.10	\$1093

<http://extension.unh.edu/Grower-Resources/Research-Reports>




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Greens Production

- Why (or why not) to grow in the winter?
- How is winter growing different
- Special considerations for winter
 - Dealing with snow
 - Crop scheduling and management
 - Harvesting
 - Ect.



Greens Production

- Year-round income is nice
- Gaining value from vacant space is nice

But...it's challenging

- Planning winter crops in July, August & Sept
- Dealing with harvest logistics in snow and cold
- Not having a 'Down time'



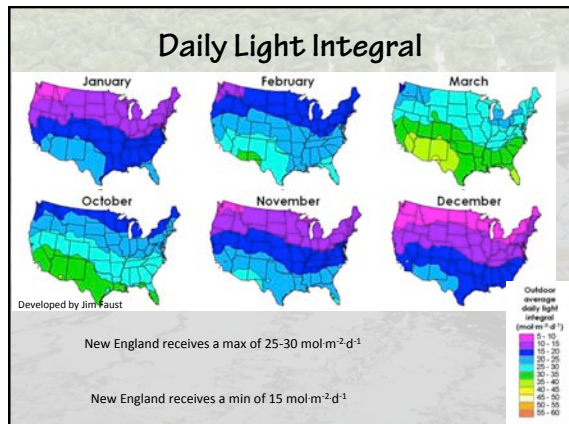
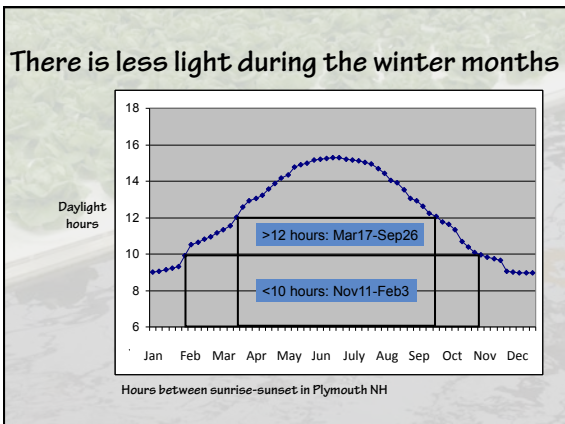

How is Winter Growing Different?



Light is the #1 Problem








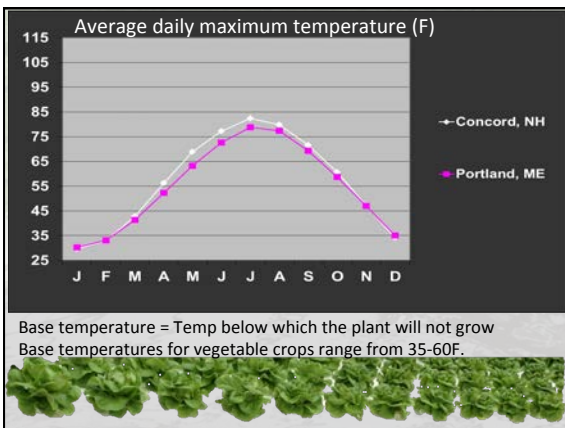


Light is the #1 Problem

- How much light is needed
 - Lettuce needs a minimum of 12 to 14 mol·m⁻²·d⁻¹
- Greenhouse will reduce the DLI by 40% (6 mols in Dec)
- High-pressure sodium lights (1,200 fc)
 - Lights need to be on 7 to 14 hr/day




Light is the #1 Problem

Temperature

- Increased heat will increase production
- Will heating expense be offset by income?
 - Maybe
 - Maybe not




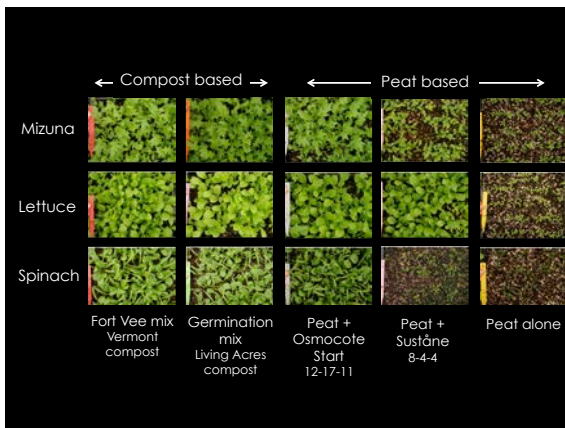
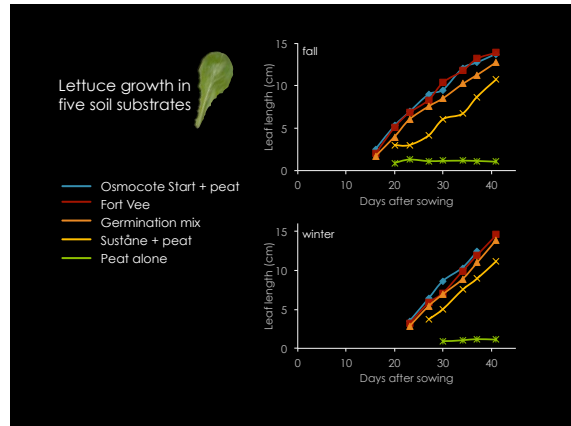
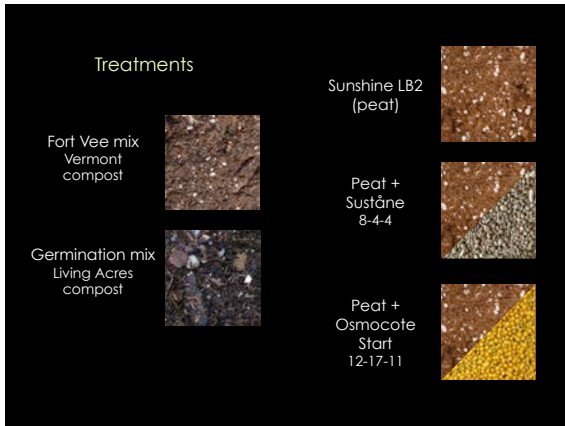

Other Considerations



Fertility

- Bench Top





Price comparison per cu ft

	Fort Vee mix Vermont compost	\$9.15
	Peat + Osmocote Start 12-17-11	\$8.26
	Peat + Sustane 8-4-4	\$8.01
	Sunshine LB2 peat	\$7.67
	Germination mix Living Acres compost	\$6.10

Fertility

- Bench Top
- Hydroponics
 - Water-soluble
 - Peters Professional 5-11-26
 - Jack's 5-12-26
 - Jack's 16-4-17

Need to add Calcium Nitrate

Food Safety

- Need to rethink our pest management methods
 - Products for ornamentals may not be registered for edibles
 - Fundamental difference from transplants

Food Safety

- FSMA (Food Safety and Modernization Act)
 - Passed in 2011
 - Rules and regulations are in draft form and will go into affect Fall of 2015
 - 1-6 years to come into compliance



FSMA – Food Safety

- Food based illnesses
 - You are liable – have liability insurance
- Talk to your local extension, and regulation folks
 - Mass – Rich Bonanno
 - CT – Diane Hirsch



FSMA – Food Safety

- Keep good records of sales!
- You may not be covered by FSMA
 - <\$ 25,000 in sales of produce
 - <\$ 500,000 in food and ½ is direct marketed



Post-Harvest

- Cleaning
- Perishable Product
 - Immediate market
 - Cold storage



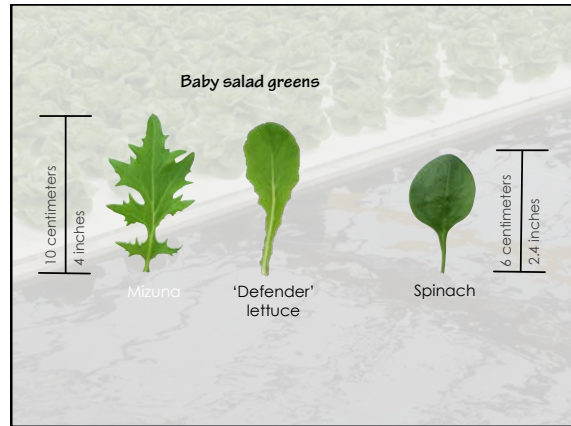
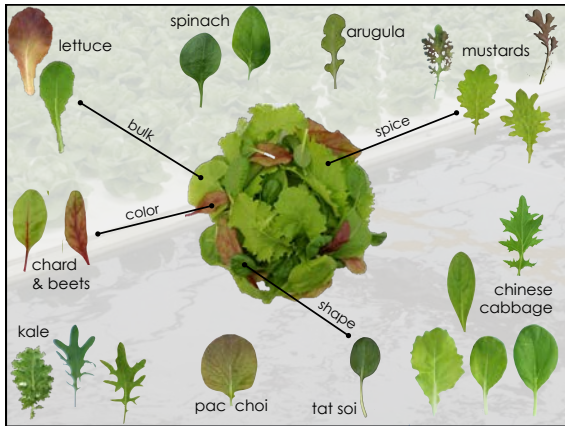
Marketing Your Product



Marketing

- Direct sales
 - Garden Center
 - Farm stand
 - Farmers' market
- Restaurants
- Grocery Stores





e-GRO Electronic Grower Resources Online

FREE Diagnostic Newsletter

e-GRO Alert

Weekly Spring Updates

www.e-gro.org

TEXT "egro" to 22828

ASHS Top Expansion Measure

Grower Training Videos - e-GRO University

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