Winter Farming Series:
Season Extension Structures
**Climate at NWREC**

**N WILLAMETTE EXP STN, OREGON (356151)**

Period of Record Monthly Climate Summary

Period of Record: 1/2/1963 to 8/31/2007

<table>
<thead>
<tr>
<th></th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sep</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
<th>Annual</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Average Max. Temp. (F)</strong></td>
<td>46.7</td>
<td>51.5</td>
<td>56.0</td>
<td>60.3</td>
<td>67.2</td>
<td>73.4</td>
<td>80.5</td>
<td>80.8</td>
<td>75.5</td>
<td>64.1</td>
<td>52.8</td>
<td>46.0</td>
<td>62.9</td>
</tr>
<tr>
<td><strong>Average Min. Temp. (F)</strong></td>
<td>33.7</td>
<td>34.8</td>
<td>37.2</td>
<td>39.9</td>
<td>45.0</td>
<td>50.1</td>
<td>53.3</td>
<td>52.9</td>
<td>48.9</td>
<td>42.2</td>
<td>37.8</td>
<td>33.8</td>
<td>42.5</td>
</tr>
<tr>
<td><strong>Average Total Precipitation (in.)</strong></td>
<td>6.31</td>
<td>4.45</td>
<td>4.18</td>
<td>2.95</td>
<td>2.33</td>
<td>1.65</td>
<td>0.63</td>
<td>0.81</td>
<td>1.67</td>
<td>3.41</td>
<td>6.24</td>
<td>7.04</td>
<td>41.67</td>
</tr>
<tr>
<td><strong>Average Total Snowfall (in.)</strong></td>
<td>0.9</td>
<td>0.2</td>
<td>0.1</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.7</td>
<td>2.0</td>
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<tr>
<td><strong>Average Snow Depth (in.)</strong></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<td>0</td>
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<td>0</td>
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<td>0</td>
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</tbody>
</table>

[http://www.wrcc.dri.edu/summary/orF.html](http://www.wrcc.dri.edu/summary/orF.html)
Season Extension on the Cheap
Cold-season (hardy)

- Asparagus
- Broccoli
- Brussels sprouts
- Cabbage
- Cauliflower
- Garlic
- Leeks
- Onions
- Pea
- Radish
Crop Selection

Cool-season (semi-hardy)

- Beet
- Carrot
- Cauliflower
- Celery
- Swiss chard
- Lettuce
- Parsnip
- Potato
Crop Selection

Warm-season (tender)
- Cowpea
- Snap bean
- Soy bean
- Sweet corn
- Tomato
Crop Selection

Warm (hot?)-season (very tender)
- Cucumber
- Eggplant
- Lima bean
- Muskmelon
- Okra
- Pepper
- Pumpkin & squash
- Sweet potato
- Watermelon
Variety Selection

- Early maturing varieties
- Disease resistant varieties
Snap Peas

Snap peas are eaten like snap beans and are much sweeter if some seed development occurs before harvesting. They become even sweeter as the pods fatten up. A string forms in some varieties and it's easy to remove by peeling it back as the pods are detached from the vine. Snap peas yield much more food per planting than any other type of pea.

PE627 SUGAR SNAP (OP) 115 days. This AAS winner brought the snap pea to the home garden and made it popular. Sugar Snap’s 6 foot tall vines need to be trellised. The plump, 3 inch long, dark green pods are exceptionally sweet and crunchy; excellent cooked or raw. Resistant to powdery mildew and pea leaf roll virus. Sow early.

<table>
<thead>
<tr>
<th></th>
<th>SAMPLER: $2.00</th>
<th>PACKET: $2.95</th>
</tr>
</thead>
<tbody>
<tr>
<td>S</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>1/2 lb: $5.15</td>
<td></td>
</tr>
<tr>
<td>G</td>
<td>5 lbs: $31.50</td>
<td></td>
</tr>
<tr>
<td>J</td>
<td>50 lbs: $205.00</td>
<td></td>
</tr>
</tbody>
</table>

PE626 CASCADIA (OP) 89 days. Another great variety bred in the Northwest. This enation-resistant snap pea comes to us from Dr. Jim Baggett at Oregon State University. The short, 32 inch vines yield an abundance of dark green 3 1/2 inch pods that are thick, juicy, and very sweet. Also resistant to powdery mildew. Interchangeable with snow peas. Makes a fabulous snack!

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<th>PACKET: $2.85</th>
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<tr>
<td>S</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>1/2 lb: $5.05</td>
<td></td>
</tr>
<tr>
<td>G</td>
<td>5 lbs: $29.75</td>
<td></td>
</tr>
<tr>
<td>J</td>
<td>50 lbs: $192.50</td>
<td></td>
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</tbody>
</table>
Placement

- Cold-sensitive crops near south-facing walls
  - Dark walls absorb heat well
  - Dark walls transmit heat equally well
- Keep them out of the shade
  - Know the sun path throughout the year
- Natural heat sinks/sources
Protection

- Mulch, mulch, mulch
- Did I mention mulch?
- Do not forget the mulch
You thought I would say mulch again!
  - Didn’t you?

Windbreaks
  - Watch out for shading
Season Extension on the Less Cheap
Mulch
Floating Row Covers
Cold Frames
Low Tunnels
Mid-sized Tunnels
Season Extension on the NOT Cheap
What is a High Tunnel?

High tunnels provide:

• Increased heat
• Protection from wind and precipitation
• Reduced leaf wetness
• Increased crop yield
• Shortened time to harvest for many crops
What is a Greenhouse?

Greenhouses provide:

• Thermal protection
• Protection from wind and precipitation
• Reduced leaf wetness
• Increased crop yield
• Shortened time to harvest for many crops
Regardless of the Structure

What is important?

- Crop Selection
- Variety Selection
- Placement
- Protection
Questions?

http://plasticulture.wsu.edu