Upcoming Webinars

• February 13 – Hops in North Dakota: What You Need to Know Before You Get Started
  – Kyla Splichal, Horticulture Research Specialist, NDSU Williston Research Extension Center

• February 20 – Growing Apples in North Dakota
  – Tom Kalb, Extension Horticulturist, NDSU Extension
Zoom Controls

Meeting Topic: Field2Fork - Tom Kalb Growing Vegetables
Host: Extension FCW
Invitation URL: https://zoom.us/j/609371435
Participant ID: 22

Mute/unmute
Open chat box
Chat box
Question/Answer Controls
Please Complete the Survey

• Please complete the short online survey that will be emailed to you after today’s webinar. It will take just a couple minutes!

• Be sure to sign up for an opportunity to win a prize in the drawing. After submitting the survey, a form to fill out with your name/address will appear.

• Acknowledgement: This project was supported by the U.S. Department of Agriculture’s (USDA) Agricultural Marketing Service through grant 14-SCBGP-ND-0038.
Successful Seed Starting at Home

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Introduction

• Why start seeds at home
• Containers
• Potting soil
• Light
• Watering and fertilizing
• Seed starting dates
Why start seeds at home

- More selection
- Cost savings
- Certain plants need more time to mature
- It's fun
Containers

• Limitless possibilities
  – Need drainage
  – Large enough to support plant
    • Root system
    • Keep plant upright
Containers

• Repurposed
Containers

- Repurposed

Chris Feser, www.flickr.com/photos/feserc/4558036939
Containers

• Repurposed

NewBee Gardener, www.flickr.com/people/25775233@N06

Sandra, www.flickr.com/photos/begotka/5726817578
Containers

- Standard

Containers

• Standard


J.B. Friday, www.flickr.com/photos/jbfriday/5919507052
Containers

• Standard
Containers

• Standard

Ariel dona, www.flickr.com/photos/ariel_dona/7731330470
Potting soil

https://grist.files.wordpress.com/2009/08/soil_2.jpg
Potting soil

• Functions
  – Reservoir for plant nutrients
  – Hold water
  – Gas exchange
  – Anchorage for the plant

• Soil based mix
  – 2 parts loam soil, 1 part sand, 1 part organic matter
Potting soil

• Soil-less mix
  – Peat (sphagnum)
    • Hold up to 60% of volume in water
    • Slow to decompose
    • Acidic; pH 3.0-4.0
  – Vermiculite
    • Good watering holding
    • Aeration
  – Perlite
    • Aeration
Potting soil

Doug Beckers, www.flickr.com/photos/dougbeckers/6589995129

www.urbanturnup.org, https://www.flickr.com/photos/127368628@N08/31460509534

Potting soil

• Fill containers
  – Dry mix
  – level to the top
  – Tap container to settle mix
  – Water
  – Seed
  – Carefully water again
  – Cover with plastic
Light

- Photosynthesis
  - $6\text{CO}_2 + 6\text{H}_2\text{O} + \text{Light} \rightarrow \text{C}_6\text{H}_{12}\text{O}_6 + 6\text{O}_2$

- Respiration
  - Maintenance
  - Growth
Light

[Diagram showing the relationship between temperature and the rate of life processes, with a peak at 70° F, indicating the optimum temperature for photosynthetic activity.]
Light

• Usually need supplemental light
  – Cool white fluorescent
  – LED

• Fluorescent
  – 12-16 hours per day
  – 4 inches or less from canopy
Light
Light
Light
Light
Light
Light

• Horizon Middle School Plant Project
  – December to April

• All plants started from seed

• Florescent lights

• Transplanted and moved to locker bay
Light
Light
Light
Light
Light
Light
Light
Light
Watering and fertilizing
Watering and fertilizing

• Keep potting soil moist during germination
• Drain excess water from trays
• Do not fertilize until true leaves form

https://acadiavegetables.files.wordpress.com/2015/06/img_1062.jpg
Watering and fertilizing

- Fertilize every 1-2 weeks
- Use general purpose water-soluble fertilizer
  - Follow directions
Seed starting dates

<table>
<thead>
<tr>
<th>Month</th>
<th>Weeks of growth indoors</th>
<th>Flower</th>
<th>Vegetable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early February</td>
<td>14</td>
<td>geranium, wax begonia, violas</td>
<td>onion</td>
</tr>
<tr>
<td>Early March</td>
<td>10</td>
<td>coleus, dahlia, petunia, snapdragon</td>
<td>broccoli, cabbage, Brussels sprouts, cauliflower, head lettuce</td>
</tr>
<tr>
<td>Mid-March</td>
<td>9</td>
<td>cleome, marigold, nicotiana, sweet alyssum</td>
<td>pepper, eggplant</td>
</tr>
<tr>
<td>Early April</td>
<td>5</td>
<td>aster, bachelor button, calendula, celosia, portulaca</td>
<td>tomato</td>
</tr>
</tbody>
</table>
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</tr>
</thead>
<tbody>
<tr>
<td>Mid-April</td>
<td>4-5</td>
<td>cosmos, sweet pea, zinnia</td>
<td>Cucumber, cantaloupe, pumpkin,</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>winter squash</td>
</tr>
<tr>
<td>Late April to early May</td>
<td>3-4</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

• Hardening off
  – two weeks before planting outdoors
    • Seedlings put in shade for a few hours
    • Gradually increase time and sun exposure
Questions?
www.ag.ndsu.edu/fieldtofork