SPRING PROJECT GROW

UNIVERSITY OF GEORGIA
EXTENSION
Master Gardener Program

PROJECT GROW

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The University of Georgia
College of Agricultural and Environmental Sciences
Cooperative Extension

Project GROW
Virtual Gardening Curriculum

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Supplies for Spring Sessions

This module requires basic supplies for starting seeds, and watering and fertilizing seedlings. If funds are available to buy supplies, options are provided in the "Items to Purchase" column. If supplies cannot be purchased, then consider the "Alternative" column for materials that can be gathered from home. Some materials are "consumables" and must be purchased or otherwise acquired.

Note: If live plants are not available, you can sow seeds, but be aware that there may not be enough time to reach a harvestable yield before frost occurs in the fall. Alternatively, you can provide the seeds but encourage participants to purchase their own plants. Refer to GROW: Basics for seed-starting instructions.

TOOLS

Items to Purchase

1. 30-watt full spectrum Grow light
2. watering can
3. plastic spray bottle
4. drill and 1/32" drill bit

Alternatives

1. grow outside when seasonally appropriate
2. milk jug or other clean beverage container that has been washed in soapy water and rinsed well (disinfect before use)
3. beverage bottle with holes punched in lid to make a watering bottle
4. hammer, nail, and wood block

STORABLES

Items to Purchase

1. 2, 5-gallon plastic pots or buckets with drainage holes and 2, 1-gallon plastic pots
2. plastic plant tags
3. pot saucers
4. clean bucket or pan for moistening seed starting media
5. frost-protection fabric
6. plant trellis materials

Alternatives

1. previously used plastic pots (disinfect before use)
2. repurpose window blinds (cut into short sections), plastic lids cut like tags, plastic disposable knife (write on the blade or handle), popsicle sticks
3. food containers or lids to serve at catch basins
4. aluminum food pan, plastic bucket or bowl (disinfect before use)
5. bed sheets, modified milk jugs, etc.
6. stakes, t-posts, poultry or cattle fencing

CONSUMABLES

Items to Purchase

1. seeds for cool-season crops (carrot and lettuce)
2. soilless seed-starting media (without fertilizer)
3. water-soluble fertilizer
4. slow-release fertilizer
5. potting media
6. plastic drink bottle (20 oz), such as from Powerade or Gatorade (heavier than a basic water or soft drink bottle, and with a wider mouth)
7. 3 seed potatoes or organic untreated potatoes

Let's talk about cool-season vegetables!

This module gets started with defining cool-season crops and their desired cultural conditions and how to begin to plan for a spring planting. This session also covers the process of growing greens indoors. Light will be critical for success, a concept that will be reinforced by the demonstration.

Preparing for this Session

- Gather the materials and supplies needed for this session (outlined in the box to the right). Refer to the supplies table at the beginning of this guide for additional guidance and substitution suggestions.
- Retrieve the presentation file and assessment polls for this session from the project website.
- Review the presentation script included at the end of this chapter.
- Review the demonstration guide and prepare the activity for the session.

Supplies

- Lettuce or spinach seeds
- Potting soil
- Watering bottle
- Small pots and saucers
- Grow light

Session Plan

:00 Gathering

- Introductions
- Recognition of military service (for audiences including veterans)
- Ice breaker
- What's on your mind (opportunity for questions before the session starts)
- Well-being pre-assessment poll – be sure to set up ahead of time
- Knowledge pre-assessment poll – be sure to set up ahead of time

:15 Lesson

- Learn about growing spring vegetables and coordinating planting times with expected temperatures.

:30 Demonstration

- This week's demonstration is sowing lettuce seeds. Two containers will be planted. One will be placed under the grow light, while the other will not. Through observation, participants will learn the value of the supplemental light for plant growth. Refer to the demonstration instruction page in this section.

:45 Summary

- Review main points of session
- Knowledge post-assessment poll – be sure to set up ahead of time

:55 Adjourn

- Reminder for next session date, time, and materials

GROW: SPRING SESSION 1 DEMONSTRATION

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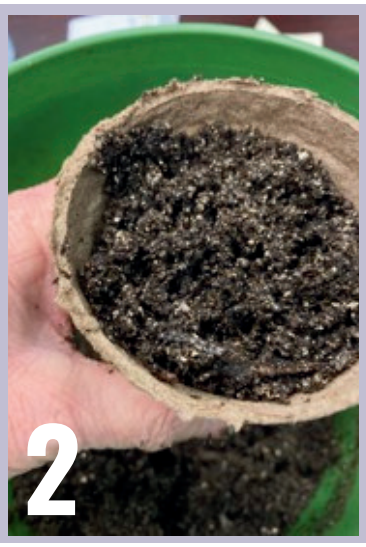
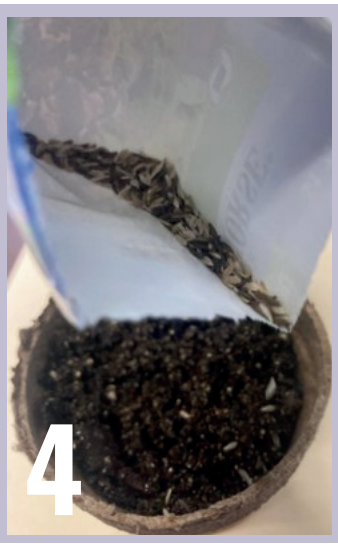
Let's learn to: prepare media and sew seeds
For this activity: watering bottle, media, pots, seeds, grow light

1. Moisten the seed starting media. Add water in small amounts, mixing by hand or with a trowel or other implement until the media is moist. Do not oversaturate! You do not want the media to be overly wet.



2. Transfer moist seed starting media to the plant pots or trays where seeds will be started.

3. Carefully open packages of fresh seed. Either slit open like an envelope or peel back the flat. Crease the front of the seed packet to form a chute for seeds to fall down.



4. Sprinkle lettuce seed lightly over the surface of the pot or container. Alternatively, place a pinch of seeds in the center of a pot or container. Lightly cover with moist media to a depth of ¼".

5. Lightly cover with moist media to a depth of ¼". Gently press seeds into the media so that there is good seed-to-media contact.

6. Place under grow lights. Lightly water in seeds with the watering bottle or a gentle stream of water.

- plastic to speed up warming the soil
- Spinach can tolerate shade but needs 4-6 hours of sun daily
- Water seeds daily and use water soluble fertilizer every 2 weeks

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- leaves above the crown or cut outer larger leaves
- If temperature exceeds 80°, shade the plant to prevent bolting

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- shade
- Kale is very cold tolerant (down to 10°) so transplants can be put out 3 weeks before the last frost date

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- the bottom leaves on the stem first
- It is a biennial so can over-winter and produce leaves the next year before bolting

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- Most varieties sprout within 7-10 days.
- Climbing varieties (6-8 ft. tall) and bush varieties (3-4 ft. tall) both need a trellis for support.
- The sugar snap peas will be ready to harvest in 6-8 weeks.
- Harvest when the pods are full-sized but still tender and the peas are just starting to swell.
- Harvest frequently while pods are sweet and tender.

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Profile of a spring vegetable: Beets

- Both the beet tops and the beet roots can be eaten.
- This cool-season crop can be sown at soil temperatures as low as 40° and easily survives frosts.
- Look for bolt resistant varieties grown in warm weather.
- Beets prefer full sun and slightly alkaline (7.0+) soil. They cannot tolerate acidic soils pH 6.0 or below.
- Soak seeds for 24 hours before planting to speed germination. Sow seed ½ in. deep and 1-2 in. apart then cover with a thin layer of soil. Keep moist.
- Each "seed" is actually a cluster of 2-4 seeds so plants need to be thinned (snip off the unwanted plants) so they are 3-4 in. apart.
- Harvest after 55 - 70 days depending on the variety when beets are golf ball sized or larger. Leaves can be harvested at any time.

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Profile of a spring vegetable: Carrots

- Carrots are a cool-season vegetable that can be planted outside 3-5 weeks before the last spring frost.
- Plant carrots ½ in. deep in full sun - once they are 1 ½ -2 in. tall, thin out to 3 in. apart by using scissors to snip off extra plants so roots are not disturbed.
- Fertilize with water soluble fertilizer after 5 weeks.
- Mulch the plants lightly.
- Pests of the carrot root include carrot rust from carrot rust flies, carrot weevils, and nematodes. Controls include planting early for cool soil and using a row cover since no pollinators are needed.
- Carrots can be harvested 70-80 days after planting when the roots are 1-1 ½ in. in diameter. To avoid breaking when pulling the carrot, first loosen soil with a spade.

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Profile of a spring vegetable: Potatoes

- This tuber develops from underground stems.
- They are usually planted from seed potatoes which have not been treated to inhibit sprouting, not from seeds.
  - Soil must be at least 45° or warmer to plant.
  - Cut large seed potatoes so each piece has 1-2 eyes or sprouts.
- Potatoes need full sun and loose, rock-free soil.
- Dig a trench 6-8 in. deep, plant a seed potato every 12-15 in.
  - Cover potato with 3-4 inches of soil.
  - After potato sprouts, cover with another 3-4 in. of soil.
  - After sprouting again, cover again with 3-4 in. of soil, then mulch.

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Profile of a spring vegetable: Potatoes

- Potatoes can tolerate light frost but need protection from hard freezes.
- Potatoes begin to form directly after flowering.
- Days to maturity is 70-90 days.
  - "New" potatoes can be harvested 2-3 weeks after flowering is done.
  - Full maturity is 2-3 weeks after leaves die back.

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Profile of a spring vegetable: Onions

- Onions can be grown using seeds, sets (small bulbs), and starts or slips (small, bare-root plants).
- Space starts and sets 6 in. apart and 1 in. deep in the soil in a sunny area.
- Seeds can be sprinkled on the ground and covered. When they are thinned out, these can be used as green onions.
- Onion roots are shallow so they need a steady supply of water to grow.
- Onions take 100-120 days to maturity. They will be ready to harvest when the tops begin to turn yellow and fall over.
- Onions that will be stored for a period of time should first be cured. Pull them up, shake off the soil and lay them out in a warm, shady location for 1-2 weeks before storing in a cool, dry place.

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Profile of a spring vegetable: Broccoli

- The edible part of the broccoli plant is the unopened flower head.
- Broccoli can be planted from seed inside, ¼ to ½ in. deep, 6-8 weeks before last frost date.
- Transplants can be planted outside after the last spring frost date.
- If your broccoli is not forming a head or only a tiny one, stress could be the problem - too cold, lack of water or nutrients, overcrowding, damage to the root system or rootbound transplants.
- Harvest before flower head blooms while the buds are tightly closed.
- Once the main head is cut off, do not pull out the plant. Smaller side shoots should continue to develop.

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Let's Practice

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Let's Practice

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Let's Practice

- Lettuce is a cool season plant
  - Can be planted outside in early spring
  - germinates at 40-50 degrees F soil temperature
  - Doesn't sprout easily above 72 degrees
- Plant seeds 5-6 inches apart ¼ inch deep in moistened potting media (use tweezers) or can be thinned later
- Sprinkle THIN layer of soil to cover seeds

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How deep do you sow seeds?

- Approximately 2 times the seed's diameter
- Smaller seeds are sown more shallowly than larger seeds

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Let's Practice

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Comparing seedling growth indoors with and without a grow light

- Place one pot on a sunny window sill and the other under a grow light (turned on 12-16 hrs daily)
- Water daily
- After 2-3 weeks, compare the two pots
- Conclusion: While plants will grow on a sunny windowsill, they do not receive adequate light there.

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Summarizing

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Summary

- In this module, you learned:
  - what can be planted outside now in the spring
  - what is a cool-season vegetable
  - important information you need to plant in the spring
  - timing for planting hardy and semi-hardy spring vegetables
  - examples of perennial vegetables, fruits and herbs
  - what is the average last spring frost date
  - hardening off and bolting
  - profiles of several cool-season vegetables
  - how to plant lettuce and spinach

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GROW: Spring

- Next session - **Sowing Seeds Outdoors In Early Spring**
  - Supplies needed: carrot seeds, potting soil, a larger container (like a 3-gallon or grow bag), and slow-release fertilizer.

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KEEP GROWING! PICK YOUR NEXT SESSION.

Project GROW has six modules. The first module covers basic concepts and has five sessions. It can be repeated as often as needed and is not necessarily tied to a season of the year. Four modules cover seasonal topics in five sessions each. GROW: Holiday is a bonus three-session module that can be delivered during the holiday season. It can easily be adapted to any growing zone.

Learn: basics of growing plants and how to start seeds
Time: 5 sessions
Repeat: as new participants join gardening classes

Learn: grow indoor plants for pleasure and enjoyment and how to propagate plants by cuttings
Time: 5 sessions
Repeat: 1x per year

Learn: cool-season edible plants and how to start vegetables and herbs indoors
Time: 5 sessions
Repeat: 1x per year

Learn: warm-season vegetables and herbs and how to grow plants outdoors in containers
Time: 5 sessions
Repeat: 1x per year

Learn: growing edibles indoors and outdoors in the fall and how to schedule plantings and protect plants in cooler months
Time: 5 sessions
Repeat: 1x per year

Learn: bonus! care of holiday plants and enjoying activities with family members
Time: 3 sessions
Repeat: 1x per year