Lesson 3: Meal Planning and Pests

Nutrition topic: *General Meal Planning and meal planning with fruit and vegetables; increasing fruit and vegetable intake*
Gardening topic: Diagnosing Plant Problems and Pest Control
Recommended recipe demo: fresh corn and radish salad (or a recipe that focuses on the vegetable being grown in the plot).
Optional FFR: Fruit and Vegetable Lesson
Optional Garden Highlight: *Use fruit and vegetable handouts to focus on a few foods being grown in the garden and bug removal.*

Objectives
Participants will be able to:

- *Explain the benefits of meal planning.*
- *Name three ways to increase fruit and vegetable consumption.*
- *Understand the difference between beneficial insects and pests in the garden.*
- *Understand Integrated Pest Management (IPM) principles and know where to find resources related to pest management in the garden.*

Required handouts: Harvest Schedule; Easy Fruit and Vegetable Swaps; Create Amazing Veggies

Recommended handouts: based on what you're planting, pull root and bulb vegetables from the vegetable handouts.

Nutrition Topic: Increasing Fruit and Vegetable Intake and Meal Planning

Increase Intake
There are many ways to incorporate fruits and vegetables into the foods you are already eating. Before you know it, eating five or more cups a day will be part of your routine.

Discussion starter: "What are some ways to increase the amount of fruit and vegetables throughout your day?"

Ambassador tip: Ask participants to shout out a typical breakfast, lunch, or dinner meal. As a group, talk about which fruits or vegetables you could add to that meal.

- Eat fruit with breakfast.
- Use fruit instead of syrup on pancakes or waffles.
- Eat fruits and vegetables for snacks.
- Add vegetables to your sandwiches.
- Add vegetables to your scrambled eggs or omelets.
- Add extra vegetables to canned soups.
- Order a side salad rather than fries or chips.
- Enjoy fruit for dessert.

General Meal Planning
Discussion starter, "Have you ever gone to the grocery store, loaded up your cart, spent $100.00 or more, come home and put all the food away, and then realized you still have nothing to make for dinner?"

- Meal planning can help avoid this situation. It is also an important strategy to ensure that your food dollars last the entire month.

Discussion starter: “What are some of the challenges to meal planning?”
Ambassador tip: Sharing some of your own challenges will help make participants more comfortable sharing their thoughts.

- Time
- Lack of cooking skills
- Don’t like sticking to a plan
- There are too many picky eaters in the house.
- Money

Distribute Grocery Shopping Packet
Discuss the steps to meal planning

- Take an inventory of what foods you already have on hand.
- Look at the MyPlate diagram to plan nutritious meals.
- Look at the store ad and incorporate foods that are on sale.
- Write your menu on the template and display it on the refrigerator.
- If a month seems overwhelming, start with a few days or a single week.
- From your menu, make a shopping list.
- Take a picture of your meal plan so you can use it again later in the month!

Meal Planning with Fruit and Vegetables
Community and personal gardens have a beautiful variety of fruit and vegetables that often change on a weekly basis. Although the variety is exciting, it can be difficult and overwhelming to come up with a menu without knowing beforehand what will be available for harvesting.

Discuss with the class participants the following tips for planning meals around locally grown fruits and vegetables:

- Plan the non-vegetable dish for each meal, and then choose the vegetable after going to the garden or market.
    - Example: chicken, couscous, and roasted vegetables
    - Garden/market list: vegetables for roasting, herbs for chicken, and couscous
- If the garden or market has recipes, like the ones provided to you throughout this program, plan on looking at the recipe before shopping and purchasing the ingredients.
- Know what produce is in season, and plan dishes that would go well with that produce. See the Harvest Schedule to predict what will be available when. Remember that this availability is always subject to change based on the growing season.
- Reverse your menu planning. Shop for produce at the market first, and then make a menu for the next week based on what you purchase. This will help ensure you use what you already have, increasing your intake of fruit and vegetables and reducing food waste.
- Bring your menu with you when you shop markets or gardens, so if something is available that you really want, you can look at your menu to see where it would fit or swap with another.
- Be creative! Plan your menu based on the color or type of vegetable rather than the actual dish until you visit the market or garden. This is a fun game to involve kids in!

    - Example:
        - menu: pasta salad with red, green, and purple vegetables
        - List: red, green, and purple vegetables

    - Example
        - Vegetable feature: zucchini
        - Menu: pasta primavera with grilled chicken, zucchini, and carrot muffins for breakfast
        - List: zucchini, carrots, onions, garlic, and parsley.

Handout-

- Select the Harvest Schedule that fits your county location.
- Fruit and vegetable swap

Gardening topic: Diagnosing Plant Problems and Pest Control

There are many reasons your plant or crop may start to decline. In addition to insects and diseases that may attack your plants, there are also abiotic issues like temperature swings, watering extremes, and varying amounts of sunlight. Looking for signs and symptoms of damage is the first step in deciding how to solve the problem. We call this diagnosing. Diagnosis requires some detective work, including observing your plants, asking questions, and gathering clues.

Properly diagnosing the problem **before** taking any action helps prevent the misapplication of chemicals and helps you correctly solve the problem.

Observations and clues

- Take note of any patterns on leaves including browning, yellowing, wilting, etc.
- Turn leaves over and look for eggs of insects or for the insects themselves.
- Look for chew marks on all parts of the plants including leaves, stem, and fruit.
- How rapidly did the problem appear? Overnight? Or has it been slowly showing up over time?
- Look at which plants seem to be affected. Are different crops showing the same problem or only one?
- If only one, identify what the crop is.
    - Some insects only feed on certain types of plants. Narrowing down which crop is affected will also help you narrow down the potential causes.
- Signs vs. Symptoms
    - What are the **symptoms** that your plants are showing that make you concerned there is a problem?
        - Yellow leaves
        - Holes in leaves
        - Browning of leaves
        - Spots on leaves
        - Wilting
        - Weeping or oozing from plant stems or leaves
    - Are there any **signs** that something is attacking or damaging your plant?
        - Eggs, larvae, or mature insects.
        - Webs or powder substance on the plant
        - Holes in the soil near the base of the plant
- If there are no signs, could something else be causing the problem?
    - Not enough water or too much water

- Too high or too low of temperatures
- Too much sun or not enough sun

Some common pests:

- Earwigs
- Squash bugs
- Aphids
- Leaf hoppers

Most Extension offices in the state have faculty members who can help you identify plant problems from pictures and/or descriptions. Contact your local Extension office or the Utah Pests Lab if you are unable to diagnose the problem yourself.

Once you have a diagnosis, you can utilize Integrated Pest Management (IPM) methods. Choosing a method will depend on your threshold or how much damage you are willing to tolerate; this will be different for every gardener.

- Mechanical management:
    - Row covers, paper collars, sticky barriers, hand removal, traps
- Cultural management
    - Crop rotation, sanitation, tillage, row spacing, resistant varieties, and crop diversity
- Biological management
    - Utilizing other organisms to control pests. This can include beneficial insects and pathogens.
- Chemical management
    - Chemical controls should be used sparingly in the vegetable garden **after** other control methods have been utilized.
        - Start with less toxic insecticides.
        - Be aware of harvest intervals—the required time between applying the chemical and consuming any fruit or vegetable for safety reasons.

When using chemical insecticides, be sure to read and follow all label directions.

Where to find information:

- Utah Pests: https://utahpests.usu.edu
- Integrated Pest Management: https://utahpests.usu.edu/ipm
- Insect identification: contact your local Extension office https://extension.usu.edu/locations or use an online service like Bugguide https://bugguide.net or Insect Identification https://insectidentification.org

Recipe Sample

Allow time for participants to taste the sample.
Encourage participants to give their feedback on the recipe, including what they would do differently.

Lesson 3 gardening terms:

- **Diagnostics:** Examining a plant for problems and determining it's health
- **Abiotic:** Problems that are a result of environmental or situational factors, such as cold temperatures, water, physical injury, etc.
- **Signs**: Physical evidence of a living organism on or near the plant
- **Symptoms**: The way we describe the damage or decline we are seeing on a plant.
- **Wilting**: Droopy leaves
- **Beneficial insects** are insects that do not feed on the roots, stems, leaves, or fruit of a plant. They are typically pollinators seeking nectar or predators of other insects.
- **Pests**: insects that feed on the roots, stems, leaves, or fruit of plants and can reduce the health of the plant.
- **Mechanical management:** Row covers, paper collars, sticky barriers, hand removal, traps
- **Cultural management:** Crop rotation, sanitation, tillage, row spacing, resistant varieties, and crop diversity
- **Biological management:** using living animals and/or insects to control weeds or pests
- **Chemical management**: see above
- **Harvest intervals:** the amount of time that **must** be allowed between when a chemical control was applied to a plant and when you can safely consume the fruit of that plant, listed on the label of the product.

- **Threshold:** A predetermined amount of acceptable pests on a plant that does not reduce the plant's ability to thrive. Once the threshold is reached, we use a management method.