

ENVIRONMENTAL EDUCATION IN THE COMMUNITY GARDEN

LESSON 6

WEEDS THAT FEED AND DEFEND

A weed is really just any plant growing in a place where it is not wanted. While fostering too many weeds drains nutrients as they compete with other plants in your garden, some so called “weeds” actually help fix nitrogen and improve surrounding plant health. Beneficial weeds can also be helpful in deterring pests and attracting beneficial insects and pollinators to a community vegetable garden.

NUTRIENT DELIVERY

Nitrogen fixing weeds can help fertilize garden plants by transforming nutrients into plant-available forms. Legumes such as clover or cowpea work in symbiotic relationships with Rhizobium bacteria to turn atmospheric nitrogen into a form that is accessible to nearby plant roots when the host plant dies. A similar effect can be achieved by leaving healthy legume roots in the soil at the end of a season and planting a different crop in the nitrogen-rich area in the spring.

Dandelions have deep tap roots that allow them to access minerals deep in the soil and deliver them to plants with more shallow roots. Dandelion and clover flowers are also attractive to honeybees and other pollinators in the garden.



Dandelion blossom and greens.

ATTRACTING BENEFICIAL INSECTS

Certain flowering weeds are powerful lures for beneficial insects, while others act as magnets to keep pests away from garden crops. Plants in the umbel family such as Queen Anne’s lace, dill, and wild carrot, attract predatory wasps that feed on pests including the devilish cucumber beetle. Flowers of goldenrod, milkweed, and nasturtium are also draws for predatory wasps. Creeping vetch provides a ground cover habitat for predatory beetles.

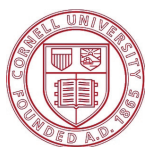
Planting specific plants near other species, known as companion planting, can also deter pests like aphids away from your main crops. Marigolds, nasturtium, and poppies are most suited to this task because they attract aphids away from vegetables and provide a habitat for predatory hoverflies. A mother hoverfly builds the protein she needs for reproduction by feasting on these flowers’ pollen. She then lays her eggs on colonies of aphids living on the plants so that they have an immediate meal of aphids when they are born. Ladybugs, lacewings, and predatory wasps benefit from similar habitats in a wide range of flowers throughout the garden. Like hoverflies, these beneficial insects lay their eggs on soft-bellied pests like aphids and caterpillars.



*A honeybee and Parasitoid Wasp on a dill flower.
Image © Steve Masley*

EDIBLE WEEDS

Hundreds of books have been written about foraging for edible “weeds” in the wild. Gardeners can also eat some of the common weeds that spring up in their plot. Lambs quarters, dandelion greens, stinging nettle, and purslane exemplify the most common edible garden weeds. Foragers often extol the benefits of finding these edible plants in the wild or on roadsides as nutrient-rich delicacies. Gardeners can simply remove them from their healthy soil and throw them in a salad.



ENVIRONMENTAL EDUCATION IN THE COMMUNITY GARDEN

LESSON PLAN 6

A BENEFICIAL WEED TOUR

OBJECTIVES:

Teach gardeners that some plants often thought of as weeds can be a natural part of the ecosystem when cultivated like garden plants.

To discourage competition with desired plants for water and nutrients, gardeners can learn to pull invasive weeds and allow beneficial weeds to feed the soil before they go to seed. Note that leaving the soil bare after pulling unwanted weeds can lead to moisture loss in the soil and colonization by even more aggressive weeds. Encourage gardeners to mulch after pulling weeds to retain moisture and prevent the spread of new weeds.

MATERIALS NEEDED:

- A diverse garden or wildlife area
- A few good weeds
- Optional: magnifying glass and weed identification guide

ACTIVITIES:

1. Take gardeners on a tour of the community garden to identify weeds.
2. Ask gardeners to identify different weeds. Compare weeds to any visible seedlings or young plants to distinguish growth characteristics. This is a great time to pull any invasive weeds like common grass that spread at the root.
3. Ask gardeners how they feel about a plant like mint or dill when it begins to take over a garden. Does it become a weed? Discuss how these two plants spread differently (underground roots vs. seeds) and why knowing how a weed grows is the best way to know how to get rid of it.
4. Use dill as an example of a weed that provides beneficial benefits by attracting pollinators and predatory wasps.
5. Ask gardeners to see if they can find any clover or volunteer legumes growing in the garden. Walk through the process of determining if the nitrogen fixing benefits outweigh any negative impact to the other crops growing.
6. If available in mid to late summer, examine companion plantings of marigolds, calendula and nasturtium in the garden to evaluate if they have been successful in luring pests away from other plants. Likewise, ask gardeners to note any flowering weeds being visited by pollinating insects.



White Clover (*Trifolium repens*)

Image Source: <http://www.garden.org/weedlibrary>



A vigorous stand of lambs quarters.

