



## FACT SHEET 4.6

# KEEPING NUTRIENTS IN YOUR SOIL: ALTERNATIVE PLANTING METHODS

While fertilizers provide a great source of nutrients to your soil and plants, if used incorrectly, they can have detrimental impacts to both your plants and nearby water resources. The first step in determining your nutrient and fertilizer needs is to perform an annual soil test. This provides you with your soil's nutrient needs based on the types of crops you plan on growing.

**A NEW SOIL TEST SHOULD BE CONDUCTED EACH YEAR TO DETERMINE THE APPROPRIATE AMOUNTS AND APPLICATION RATES OF FERTILIZERS TO MEET YOUR GROWING NEEDS. THIS IS IMPORTANT, BECAUSE AS YOUR CROPS GROW, THEY WILL DEplete THE SOIL OF CERTAIN NUTRIENTS REQUIRED FOR THAT PLANT TO THRIVE. THESE NUTRIENTS WILL NEED TO BE REPLENISHED FOR FUTURE SUCCESSFUL HARVESTS.**

By incorporating some simple cultivation practices into your hobby farm nutrient management plan, you can reduce the depletion of nutrients in your soils. This in turn can reduce the amount of fertilizer you need to add each year, saving you time and money, while helping to protect our environment and water resources. Consider keeping nutrients in the soil by using one or more of the following methods.

## CROP ROTATION

Crop rotation is the practice of growing plants in different areas of your garden or field each year. Growing the same types of plants or plant families in the same place each growing season can deplete your soil of the nutrients preferred by that crop on a yearly basis. By rotating where you plant your crops, they are better able to utilize the different types and amounts of nutrients in the soil and have a better chance of interrupting any type of disease or pest cycle. Additionally, some plants routinely leave behind nutrients in the soil which can often be used by other types of crops. For example, it makes sense to plant crops like lettuce that use lots of nitrogen in an area where nitrogen fixing legumes like peas were planted the year before. Similarly, heavy feeders like tomatoes can be followed by light feeders such as herbs and root crops.

### DID YOU KNOW?

The 'three sisters' is a Native American companion planting technique where corn, beans and squash are grown together. Each crop or 'sister' contributes to the planting. Corn provides support for the climbing beans; beans add nitrogen to the soil; and the large prickly squash leaves near the ground help keep out predators while shading the soil, keeping it moist and preventing weeds.

## ALTERNATIVE PLANTING METHODS SUCH AS THESE CAN:

- Increase plant health, soil fertility, soil structure and yields
- Reduce fertilizer use, pests, stormwater runoff and erosion
- Maintain a small fruit orchard
- And many more...

### SUCCESSION PLANTING

Succession planting works similarly to crop rotation as it introduces several types of plants into one area, using different nutrients and boosting soil structure. Succession planting is the practice of replacing short season crops with a new crop in the same location. For example, quick growing lettuce and radishes can be harvested early in the growing season and immediately replaced with a longer growing crop such as tomatoes. Another way to keep nutrients in your soil is to consider planting a cover crop after you harvest, such as clover or alfalfa. This crop will help prevent soil erosion and add nutrients back into your soil.



### INTERCROPPING

Similar to succession planting, intercropping involves planting a short season crop together with a long season crop. Instead of planting them one after another like succession planting, they are grown next to each other with the idea that the short season crop will be harvested prior to the long season crop that requires more space and nutrients for growth. For example, you may want to consider planting quick growing lettuce adjacent to pumpkin plants; the lettuce can be harvested early, freeing up room for pumpkin plants.



### COMPANION PLANTING

Companion planting involves the planting of two or more different crops close to each other for their mutual benefit. It is thought that certain plants work well with others with the idea that their specific properties will benefit one another. For example, planting different but carefully selected crops in proximity to one another can assist in nutrient uptake, pest control, pollination, and/or other factors necessary for reducing pest damage and/or increasing crop productivity.

#### HELPFUL LINKS

[www.ag.umass.edu/resources/home-lawn-garden/fact-sheets/vegetable](http://www.ag.umass.edu/resources/home-lawn-garden/fact-sheets/vegetable)

[www.ag.umass.edu/home-lawn-garden/fact-sheets/companion-planting-in-vegetable-garden](http://www.ag.umass.edu/home-lawn-garden/fact-sheets/companion-planting-in-vegetable-garden)