

I think it is safe to say that even if you did not grow up on a farm, you have more than likely heard the words, *crop rotation*. This procedure has been practiced by farmers for generations. The basic concept of crop rotation is to alternate growing one crop with another. Usually this rotation occurs after one particular crop has been growing in the same area for a number of years. When an alternate crop is planted, it is likely one from an entirely different plant family. Have you ever wondered why?

Many disease-causing pathogens and insect pests are host-plant specific. These pests need a particular host plant on which to feed, to prosper and to survive. For example, corn borer feeds mostly on corn. If a farmer continues to grow corn year after year in the same acreage, and his corn is plagued with corn borer, chances are this insect pest will continue to be a problem until he or she rotates. Should he or she alternate and plant that same area in a new crop such as soybeans, the corn borer dies out due to the lack of food— the host plant, corn.

Crop rotation also prevents soil nutrient depletion and maintains soil fertility. Crop rotation helps to reduce reliance on synthetic chemical pesticides.

Winter is quickly vanishing and perhaps you find yourself planning for this year's vegetable garden. Before you do so, think crop rotation. Did you know crop rotation is also a wise choice for vegetable gardeners?

Take time to familiarize yourself with different plant families of vegetable crops. For example, melons, pumpkins, gourds and squash all belong to the *cucurbit* family. Cabbage, turnips, radish, broccoli, cauliflower, and kale belong to the *crucifer* (Brassica) family. String beans, snow peas, lima beans, peanuts and lentils are all members of the *legume* family. Potatoes, tomatoes, peppers, and eggplant belong to the nightshade family called *Solanaceae*.

Consider this. If you have been growing tomatoes year after year in the same area of your garden, now might be the year to consider crop rotation. This situation is especially important if you have been consistently plagued with tomato fungal blights and diseases. In order for a disease pest such as tomato blight to succeed, three conditions must be present, and all three must occur at the same time. The first requirement is the host plant. In this case it is the tomato. Secondly, the disease-causing pathogen must be present. Tomato blight is a soil-borne, disease-causing pathogen. Once it is present, and if tomatoes are

continually grown in the same area, the pathogen continues to exist. Thirdly, optimal environmental conditions must be present for disease-causing pathogens to attack the host plant and prosper. To prevent this problem, the chain must be broken.

Crop rotation is a non-chemical, simple cure. Keep in mind, since tomatoes, potatoes, and peppers belong to the same plant family, one would not rotate with any of them. Rotate with an entirely different plant family such as a legume. For example, beans are not affected by tomato blight. By rotating with beans, the problem would disappear.

This agricultural practice is also effective if one is having problems with specific insect pests. The dreaded squash bug is known to attack and destroy squash, pumpkin and many other cucurbits. If one were to continue growing squash year after year in the same area, more than likely a major buildup of squash bugs would occur. By rotating to an entirely different plant family, such as potatoes, the squash bugs would eventually die out due to the loss of food. Furthermore, this example of crop rotation not only gets rid of the squash bug pests, but it also eliminates the need for synthetic chemical insecticides that can cause potential problems over time.

Crop rotation is not just for farmers. Before you plant this year's vegetable garden, consider the locations of the crops in your garden for the last few years. If you have been growing a particular vegetable in the same area of your garden, now might be the time to practice crop rotation.