Crop rotation and companion planting

Pa of ga den planning in ol e deciding he e o plan ce ain c op in he ga den each ea You will need to figure out which crops benefit from following other kinds of crops (crop rotation) and which crops make good neighbours (companion planting).

C op o a ion

The basic idea of crop rotation is to avoid planting the same vegetable in the same spot each year. There are several important reasons to do this, especially if you want to avoid using pesticides. By moving the crops, pests and diseases are less likely to be a problem. Planting in the same spot allows a build-up of pests and diseases, many of which overwinter in the soil. It's important also to understand that crops in the same family are subject to the same pests and diseases. So, when planning your rotation, make sure you are not putting a member of the same crop family into a less than desirable location. Ideally, wait three to five years before growing the same vegetable, or a closely related one, in the same location. (See Table 1 for vegetable families.)

Rotating crops also makes better use of soil nutrients. Each crop takes up a particular amount and combination of nutrients from the soil. Growing a crop in the same spot year after year can deplete the soil. A good guideline when starting a rotation is to bring your soil to the best possible condition, then grow a heavy-feeder in year one, followed by a medium-feeder, and then one or two years of light-feeders. Be sure to boost soil fertility (with extra compost or green manure) before returning to a heavy feeder (see Table 2).

Consider families of ege ables hen planning ro a ions Lana Bos, Dalho sie

TABLE 1. VEGETABLE FAMILIES

B	C
Broccoli Brussels Sprouts Cabbage Cauliflower Kale Kohlrabi Radish Rutabaga Turnip	Cucumber Gourds Muskmelon Pumpkin Squash Watermelon
I	A
Eggplant Pepper Potato Tomato	Carrot Celery Fennel Parsley Parsnip
C I	F
Beets Chard, Swiss Spinach	Beans Lentils Peas
A	A
Artichoke Endive Lettuce	Garlic Leek Onion
P	L
Corn	Asparagus

Legume crops, like beans and peas, are especially good at boosting soil nitrogen fertility. Legumes form a symbiotic relationship with soil bacteria called “rhizobia”. These bacteria are able to capture nitrogen from the air and feed it into the plant’s roots. If you dig up a legume plant, you should see small balls or nodules on the roots. Rhizobia live in the nodules. It’s a good idea to use a legume inoculant when planting legumes in soil where they have not been grown before. The inoculant contains various species of rhizobia and ensures a good population in the root zone.

Activity 1

De ign a h ee ea o a ion plan fo o ga den

Draw a large rectangle on a piece of paper. This will represent your garden. Divide the rectangle into three equal parts. You now have a diagram of three beds that you can use to plan a simple rotation. For this exercise, we will divide vegetable crops into three groups based on the amount of nutrients they need:

1. Heavy-feeders
2. Medium-feeders
3. Light-feeders

List three heavy feeding crops in the first 'bed' of your diagram. List three medium-feeders in the middle bed and three light-feeders in the last bed. These are the crops you will plant in year 1.

Draw two more large rectangles and divide them into three equal parts. These rectangles will represent your garden in years 2 and 3.

E ; heavy-feeders go to the light-feeder's previous spot, moderate-feeders go to the heavy-feeder's previous spot, and light-feeders go to the moderate-feeder's previous spot.

Using different coloured markers, mark the crops on your diagrams that are in the same families. Are crops of the same family located in the same bed in subsequent years? You may have to do some juggling to best meet nutrient needs and to prevent build-up of pests and diseases!

Activity 2

Make a cha of ga den f iend and ad e a ie

Look for a book or website on companion planting and make a chart of garden friends and adversaries. See how you can fit companion planting into your garden rotation plan.