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## FROM POT TO PLOT NOTES

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### 1. Transplant shock avoidance : Transplant shock can set plants back by weeks and cause leaf drop

**Disturb the roots as little as possible** – Unless the plant is root bound, you should do as little as possible to the rootball when moving the plant from one location to the next. Do not shake the dirt off, bump the rootball or rough up the roots.

**Bring as much of the roots as possible** – Along the same lines as the tip above for plant preparation, preventing shock means when digging up the plant, make sure as much of the roots as possible is brought up with the plant. The more roots that come with the plant, the less likely transplant shock in plants will set in.

**Water thoroughly after transplanting** – An important transplant shock preventer is to make sure that your plant receives plenty of water after you move the plant. This is a good way how to avoid transplant shock and will help the plant settle in to its new location.

**Always make sure the rootball stays moist when transplanting** – For this transplant shock preventer, when moving the plant, make sure that the rootball stays moist in-between locations. If the rootball dries out at all, the roots in the dry area will get damaged.

### Cure plant transplant shock : While there is no sure fire way to cure plant transplant shock, there are things you can do to minimize the transplant shock in plants:

**“Hardening off”** – prepare the plants for transplanting by putting them outside for periods for a couple of days. If it is likely to be frosty at night take them in. Ensure that they are out of wind, direct sun and are kept watered . Cloches or a cold greenhouse are ideal for this.

**Transplant on a cloudy day or later in the day.** If on a sunny day – cover with loose cover to avoid sun and ensure that they are well watered in.

**Add some sugar** – Believe or not, studies have shown that a weak sugar and water solution made with plain sugar ( complex carbon) from the grocery store given to a plant after transplanting can help recovery time for transplant shock in plants. It can also be used as a transplant shock preventer if applied at the time of transplanting. It only helped with some plants, but as this will not harm the plant, it is worth a try.

**Add oats at the bottom of the hole** – it is a complete nutrient (just as it is for us). Contains Vitamin B1 .

**Trim back the plant ( NOT for seedlings)** – Trimming back the plant allows the plant to focus on regrowing its roots. In perennials, trim back about a 1/3 of the plant. In annuals, if the plant is a bush type, trim back a 1/3 of the plant. If it is a plant with a main stem, cut off half of each leaf.

**Keep roots moist** – Keep the soil well watered, but make sure that the plants has good drainage

**Wait patiently** – Sometimes a plant just needs a few days to recover from transplant shock. Give it some time and care for it as you normally would and it may come back on its own.

**Plants should be settled into the garden at the same soil level as they were growing in their pots.** Tomatoes are the exception to this rule, because they are able to sprout roots all along their stems. With large tomato seedlings you can carefully remove the bottom leaves and bury the roots and stem so only the top 4-6” of the plant shows above the soil level. <http://gardening.about.com/od/totallytomatoes/tp/Growing-Tomatoes-From-Seed.htm>

**Soak all transplants thoroughly before putting them into the garden.** Move individual plants from pot to soil quickly so their roots are exposed to the air as briefly as possible. Once planted, immediately soak the entire area to establish good capillary action between the newly-disturbed soil and the surrounding soil. Soaking means watering slowly to moisten the soil to a depth of 3-4”. If possible, give these new plants a strengthening drink of seaweed or seaweed-fish fertilizer. Those vitamins and other nutrients are easy for plants to absorb and will help minimize stress.

<http://blog.gardeners.com/2010/05/prevent-transplant-shock.html>

## **2. Companion planting**

<http://ourgardengang.tripod.com/companions.htm> - a good listing of companion plants and of bug attractors and bug repellents .

## **3. Pests :**

Canada grow Smart – pesticide alternatives for a greener world -<http://dev6.ceedcentre.ca/pests.html>

[http://pestcontrolcanada.com/bug\\_identification.htm](http://pestcontrolcanada.com/bug_identification.htm):

### **Basics of Bug Identification**

*This article by Rick Foster appeared in "American Vegetable Grower," March 1991.*

Most insects have one of two distinctly different types of life cycles. The first is called incomplete metamorphosis. With this type of life cycle, the immature insect, called a nymph, looks very much like the adult, except that it is smaller and lacks wings. Insects with incomplete metamorphosis usually feed in much the same manner and on the same food in the immature and the adult stages. Some examples of pest insects that have this type of life cycle include the true bugs, leafhoppers, and aphids.

The other type of life cycle is complete metamorphosis. These insects have an immature stage, called a larva, that looks nothing at all like the adult. The larval stage often feeds in a completely different manner than the adult. There is also a pupal stage which occurs between the larval and adult stages. It is during this stage that the remarkable transition from caterpillar-to-butterfly or maggot-to-fly takes place.

Some examples of insects with this type of life cycle include ants, caterpillars, maggots, and beetles. An important point is that once these insects become adults, **they do not grow any larger.**

**The rest of the article covers in more details :**

### **Common Vegetable Pests**

- **Mites.**

Mites are not insects. Therefore, the best way to identify them is by counting their legs. They have eight, while insects have six. However, mites are very tiny; counting their legs requires the use of a hand lens. Mites have sucking mouth-parts and generally feed on the underside of leaves\

- **Aphids.**

Aphids are soft-bodied insects that occur in colonies on the underside of leaves. They also have sucking mouth-parts with which they remove plant juices from the leaves of most vegetable crops. Leaves that have been fed upon by aphids may become curled.

- **True Bugs.**

Although many people call all insects 'bugs' there is only one group of insects that are truly bugs. Most bugs can be recognized by the presence of a triangle on the back directly behind the head. Several different types of bugs damage vegetables, including the tarnished plant bug, some species of stink bugs, chinch bugs, and squash bugs.

- **Leafhoppers.**

There are a number of sizes, shapes, and colors of leafhoppers. Adult leafhoppers are relatively small, rarely exceeding 1/4-inch in length. Some leafhoppers that are important pests of vegetables include beet leafhopper, potato leafhopper, and aster leafhopper.

- **Thrips.**

Thrips are slender, very tiny insects that feed with rasping or scraping mouth-parts. The wings of adults are fringed with long hairs, but these may be difficult to see. Some species are capable of transmitting serious diseases of vegetables. Thrips also feed on small grains and weeds, and may move to vegetables in large numbers when these hosts dry down in summer.

- **Beetles.**

Beetles can be readily distinguished by the hard covering that is formed by one of their pairs of wings. They vary greatly in size, shape, and color. The larvae may be grub-like or almost caterpillar-like. Both adults and larvae feed with chewing mouth-parts. The larvae of some species, such as bean leaf beetles, root-worms, cucumber beetles, and wire-worms, feed on underground portions of plants. Others, such as Colorado potato beetles and Mexican bean beetles, feed on plant foliage in much the same manner as the adults.

- **Maggots.**

Maggots are the larval stage of flies. They are usually white, legless, soft-bodied insects that feed in moist locations. Most of the maggots of importance on vegetables feed on the roots or other underground plant parts. The most important maggot pests of vegetables are the cabbage maggot, onion maggot, and seed-corn maggot

- **Caterpillars.**

Probably the largest group of pests on vegetables are caterpillars, which are the larval stage of butterflies and moths. They may vary in size from the diamondback moth larvae (3/8-inch long) to the tomato and tobacco horn-worms (4 inches long). Correctly identifying which species of caterpillar is difficult. Again, make good use of the reference materials you have available. The first step in identifying a caterpillar is to note which crop it is feeding on.

#### **4. Diseases and natural ways to combat them**

- [http://garden.lovetoknow.com/wiki/Common\\_Plant\\_Diseases-very basic overview](http://garden.lovetoknow.com/wiki/Common_Plant_Diseases-very_basic_overview)

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- <http://www.planetnatural.com/site/plant-diseases.html> – good pictures. See side panel for organic pest / disease repellents etc.

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- <http://www.gardenersgardening.com/plantdiseases.html> - good on fungal problems

- **Powdery mildew** is caused by the spread of fungus spores that infect plants. The affected plants appear to have a white powder clinging to the leaves, and the leaves will eventually die, killing the plant. This fungus can infect many plants ranging from flowers to tomato plants.
- **Black spot** is the scourge of rose growers nationwide, but it can also affect other plants such as tomatoes. As the name suggests, brown or black spots appear on leaves; the leaves may turn yellow and fall off. While this fungus doesn't kill the plant outright, repeated bouts of black spot make the leaves fall off
- **Damping off** is a fungal disease that affects seeds or seedlings. It's caused by too much water. When starting seeds, try watering seed trays from the bottom; pour the water into a tray underneath the seed starting tray.
- **Rust** is a fungus that affects many fruit trees and some flowering plants and shrubs. According to some sources, there are over 5,000 different bacteria that can cause rust, making it hard to identify the exact culprit attacking your garden plants. Rust leaves tell tale signs, such as brown spots, like freckles, on the back of plant leaves.

#### **5. 10 best lines of defence against pests and disease- inside “da fence”: From Bob Flowerdew**

1. Good husbandry
2. Hygiene
3. Resistant varieties
4. Cunning cultivation methods –
  - rotation,
  - timing ,
  - covers,
  - indoor starting ,
  - mulching,
  - Supplements
5. Encourage predators and parasites
6. “ Hide and seek” companions
7. Barriers and traps

8. Direct action

9. Bought in predators

10. Pesticides

- Beware , pyrethrin or rotenone ( aka derris)
- Insecticidal soap: very good, and not so dangerous
- READ the label
- ALWAYS dilute as per instructions

## **6. Crop rotation and green manures**

<http://www.vegetableexpert.co.uk/VegetableCropRotation.html>:

For healthy soil and high yields, it's a good idea to practise crop rotation. With crop rotation, vegetables in the same botanical family are grown in a different part of the garden each year. Rotation can also be practised when planting successive short-season crops in the same plot during a single growing season.

Why Use Crop Rotation?

Crop rotation can improve soil fertility and structure; help manage diseases and insects that affect a specific plant family and aid in weed control.

Vegetables in the same botanical family have similar nutrient requirements. Some are "heavy feeders" and deplete more of the soil's minerals, while others are "light feeders" using up fewer minerals. In addition, there are those plants that actually improve the soil and add nutrients. By alternating the planting of these three types of crops in a single plot, the health of the soil can be maintained. Heavy feeders include broccoli, sweet corn, and tomatoes. Light feeders include carrots, onions, peppers, and potatoes. Soil builders include legumes such as peas and beans.

[http://www.harvestwizard.com/2010/04/vegetable\\_crop\\_rotation.html](http://www.harvestwizard.com/2010/04/vegetable_crop_rotation.html)

<http://www.gardenaction.co.uk/allotment/allotment-rotation-1.asp>- UK but interesting as it applies to St Mary's garden's situation – but UK allotments are much bigger than the spaces provided at St Mary's

<http://www.the-organic-gardener.com/green-manure.html>- good explanation of why green manure **but beware most of the green manures advocated grow in Zone 6+ in the UK .**