

#### GARDENING MATTERS: POLLINATION

Pollination can be a problem for gardeners when it does not occur naturally.

Various plants use different modes of pollination from attracting insects such as bees to move the pollen to air movement or vibration.

Often we think of the honey bees as the main pollinators, which for a number of plants and crops they surely are, but then there are bumble bees, native bees, flies, moths, butterflies and other insects which can all assist in the pollination process.

The wind, or more to the point, breezes are also responsible for moving the pollen in some plants to complete the fertilisation process. A good example of this in the vegetable garden is sweet corn, the pollen is formed on the male flowering heads at the top of the plant with the female corn tassels below, given a light breeze and the pollen dust falls to the tassels below or to the corn plant next door.

This is the reason we plant corn in clumps, fairly close to each other to ensure that a good set is achieved and the cobs are full. Each one of those fine tassels that form on the ears of corn are connected individually to an embryo corn seed and each tassel needs to receive pollen to fill the cob nicely.

Those cobs that only have a number of mature seeds with misses means that those misses did not receive pollen from the tassel.

When I grow corn I like to do a bit of hand pollination on a sunny day when the tops are laden with pollen. This is simply done by running your hand up the male flowers and dumping the contents on the female tassels below. It helps ensure fuller cobs at harvest time. Also 2 weekly sprays of **Magic Botanic Liquid** makes for better, bigger sets on the cobs.

When nature and elements don't do the pollination for you, then this is where you the gardener, can step in and do the job yourself.

Some plants are what we call self fertile which means that the plant will ensure that it will set seed without the need of another plant of the same species being anywhere near. Many of these are wind pollinated.

The rest of the plants of various types are likely to need another similar plant nearby to ensure a good fruit or seed set. These other plants are often referred to as pollinators and without one you will still get some fruit setting, but no where as good as if you had a pollinator also. Many of these will be pollinated by bees or other insects.

Then again in some plants such as with Kiwi Fruit you have a situation where some plants are male and some are female and then you need at least one male in close proximity to about 1 to 5 females.

Where room is limited we have overcome the problem of having to plant two separate kiwi fruit vines by grafting a male and female onto the same root stock.

Even then there is no guarantee that you are going to achieve a good fruit set as it takes bees to visit both the male and female flowers to move the pollen. Because of the viroa mite, which has destroyed most if not all the feral bee colonies there may not be any honey bees around your gardens any more.

Then it comes down to the bumble bee and native bees along with other insects to do the job.

Then another problem may occur where the possible pollinators are elsewhere in the garden collecting nectar and leaving your tree alone even though it's in full flower. You can help to attract the possible pollinators to your target tree by dissolving raw sugar in hot water and adding more water and then spraying the sweet liquid over your target tree.

Another range of problems can occur if a plant is in a too greater shade situation where it does not get sufficient sunlight directly on the plant to initiate flower buds or if the buds form, they buds don't open into flowers.

We often see these on roses in the shade which don't flower well and also on flowering house plants that are too far from natural light to flower properly, such as flowering begonias.

Cold conditions can mean a plant such as a tomato will flower but not produce pollen, thus the flowers fall off after a few days. Cold setting types are best for those colder times.

Also if it gets too hot then tomatoes will not set fruit and that can be seen at times in glasshouses.

Tomatoes are not pollinated by bees though the vibration from a bumble bees wings does the trick as they fly near the plant. A light breeze on a sunny day when the flowers are pollen laden does the job and generally speaking tomato plants outdoors will set fruit well.

In glasshouses and similar sheltered areas the plants may fail to set well and this can be overcome on a sunny day by simply tapping the stake or trunk of the plant to cause a vibration.

A very important aspect in the flowering fruiting cycle is to have ample potash available to any flowering/fruiting plant.

A monthly sprinkle of **Fruit and Flower Power** on the soil in the root zone will greatly assist.

Pumpkins, zucchini and melons have both male and female flowers on the same plant and the pollen needs to be moved from the male to the female. If you have good populations of bumble bees around then they normally do the job for you otherwise you will not have a crop.

The female flower is easy to determine as they have the embryo fruit behind the flower, the male does not.

To ensure a good fruit set I like to, on a nice sunny day, pluck a male flower off the vine that has ample pollen and after removing the petals rub some of the pollen onto the centre part of the female flowers.

If the fruit is not pollinated it will still grow for a time but then rot off.

Passion fruit can be another one that a bit of hand pollination will help ensure a good crop.

Too much nitrogen in the form of man made fertilisers or animal manures can cause plants to vegetate which means they produce lots of growth but little or no flowers.

If this is happening then apply **Fruit and Flower** power to kick in the flowering cycle and stem the rapid growth.

Some plants such as bougainvillea need a bit of stress to give a great show of flowers.

If you feed them well and supply ample water they tend to grow all over the place and not flower.

Instead let them dry out for a time to kick in the flowering cycle and don't feed them much either.

As a gardener you need to remember that most plants only flower to reproduce themselves by seed.

When their lives are threatened then they quickly go into a flowering cycle.

The best example of this is a number of annual weeds that grow lushly in the spring when there is ample rain but as soon as the soil starts to dry they start to flower.

On our vegetables such as cabbages and silverbeet we need to keep the soil moist because if we allow it to dry out too much the plants will bolt or in other words, go to seed prematurely.

One last aspect is potatoes, early types will be mature and ready to harvest when the tops start to flower.

Late types will be ready when they have flowered and the tops start to die back.

Often you may see that fruit not unlike tomatoes form on the potato tops, these are fruit which contain seeds, they are not to be eaten as they are poisonous.

Problems ring me at 0800 466464 (Palmerston North 3570606)