Farm garden medicine chest

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Some people prefer not to use chemical sprays for pests but it is a case of *them or us*. Pests, insects and diseases compete directly with us humans in the food chain. The idea of a chemical that is harmless to us and deadly to insects is so far a dream. Most if not all chemicals that kill insects are also harmful to us. Years ago I grew commercial garlic. Grubs ate it. These grubs may not have had much of a social life but they were healthy. Many household chemicals are toxic. These include kerosene, oven-cleaner, dry cleaning fluids and even salt, if enough is eaten.

It is a fact of life that in most years the following crops will not be successful unless sprayed — rose, grape, papaw, avocado, peach, melons, citrus, strawberry and others. No spray, no crop.

The following programme has been greatly simplified. While it is not perfect it should give around 80% efficiency. The odd grub or grub hole is a sign there is little or no chemical left on the food. Insects should be sprayed only when they are actually on the plant that is on sight. Small numbers of insects can get the completely biodegradable treatment of hand picking or throwing on the ground and stomping to death. Aphids can be hosed from the plants. The aim is to have the minimum number of sprayings, each with the maximum effective kill. Resistance to insecticides is easily acquired by insects.

Insecticides used are diazinon, which can be sold under many brand names, and fenthion, sold as Lebaycid®. This is a made up word, 'Le' meaning 'the', 'bay' short for Bayer (the company that makes it) and 'cid'(e) meaning 'kill' as in suicide, homicide, etc. I use diazinon for fleas and ticks on my dogs, buffalo fly on the cows and, cockies in the laundry as well citrus leaf miner, aphids, some cabbage grubs, corn ear worm, bronze orange bug scales, mealy bug, and others. It will control most insects except fruit flies. Lebaycid controls fruit flies.

Fungicides must be used for prevention. If you can see the diseases, it is too late. Mancozeb, sold as Dithane®, is a powder used at the rate of 2 g/L water. It can be used on all plants. I regard it as a 'soft' chemical, one that is kind both to the user and the garden. It is also a source of manganese and zinc, which are required by the plant in small amounts. In other words, manganese and zinc are micronutrients or trace elements.

Copper oxcychloride, or green copper, is an old fashioned spray that has good weather resistance. It should not be used on early peaches which are copper shy. I use it at 3 g/L. Copper was the second chemical used in agriculture for disease control. During the Irish potato blight years of the mid-nineteeth century, it was noticed that potato plants near copper smelters did not have the disease.

Sulphur originally came from volcanoes, so people thousands of years ago believed it was from the gods. They used it on plants and controlled some diseases such as a powdery mildew. It is one chemical that is a fungicide, an insecticide and also a fertiliser. In my boyhood days, sulphur and treacle was a spring tonic administered by parents to reluctant children. Use wettable sulphur at 3 g/L. Stop when the temperature is over 30°C. Do not use on rockmelons, cucumbers or sulphur shy plants.

Most of Queensland, which is a great state for people but not plants, is deficient in micronutrients such as zinc, boron, copper, manganese, molybdenum and others. A foliage or leaf fertiliser is the way to go. I use mine at slightly under-strength to avoid burning. About 15 g/5L or 3 g/L usually does the trick.

It is never safe to mix two or more chemicals unless the labels on the container recommend it. If in doubt contact the manufacturer. Do not mix in the spray container and mix each chemical with a little water first. Water allows us to spread the chemical evenly over the plants. Two plastic buckets of known volume is the way to start. Then mix by pouring from bucket to bucket.

If I want to spray a whole range of garden plants which includes peaches (copper shy) and rockmelons (sulphur shy), I make up the mix without these. Spray the peaches and rockmelons first, then add copper and sulphur.

Take one crop as an example — tomatoes. When young, from day old to six to eight weeks, they can be sprayed with a half strength mixture at weekly intervals. Sprays include diazinon, mancozeb, sulphur, copper oxy and leaf fertilisers. When the fruit are half-grown (golf ball size) fenthion can be added. These treatments are applied fortnightly. When the plants are being harvested, pick hard, then spray and wait three to four days for the next spray.

Always clean out equipment after use. Do not use weedicides in your spray equipment and always read directions on the packet *several times*.

Good spraying and good gardening.