

growth will result. A value of less than 7 indicates acidity, of over 7, alkalinity. Begonias like a growing medium with a pH between 5.5 and 6.5 but will tolerate, albeit unwillingly, a wider range than this. Simple pH test kits can be readily purchased, and I recommend that you buy the type which uses a liquid indicator and a powder reagent, for these are easy for the home gardener to use and sufficiently accurate for all general gardening purposes. To adjust the pH of your soil or potting mix is relatively simple - to raise it, add a dressing of dolomite or crushed limestone, to lower it treat with sulphur. It is wise to test your growing medium on a regular basis as the constant use of fertilisers will increase acidity. This is one good reason for re-potting potted plants every two or three years.

Here I must alert owners of new houses – gardens being established round a newly built home may often contain builders debris, often buried, and this will most certainly contain cement in one form or another, a substance which will raise the alkalinity of the soil to unacceptable levels. The same applies to newly made cement pots or planters. In both instances the adjustment of the pH before planting is a must.

### **Fertilise the Growing Medium**

Finally give the garden bed a dressing of controlled release fertiliser. The best organics are Blood and Bone or Dynamic Lifter® (pelletised fowl manure), whilst there are a number of good non-organics like Osmocote® and Nutricote®. Whatever you use make sure that the necessary trace elements are included. If they are not mentioned in the analysis on the fertiliser package then they can be purchased and added separately, but they are essential for good plant performance. Commercial potting mixes may contain a ration of controlled release fertiliser and trace elements. If they conform to the Australian Standard (see Annex B) then they will do so; if not, the presence of fertilisers and other additives should be printed on the package. If the mix contains no fertiliser then add one of the controlled release types mentioned above. (See also chapter 10).

### **Toxicity**

Sometimes a soil or potting mix may be toxic to plants due usually to incorrect composting of wood products such as sawdust or wood chips used in preparing the garden or making the mix, or to the presence of a toxic level of salts which have built up in the garden as a result of many years of fertiliser use or even in a bag of potting mix which perhaps contains too much fertiliser. If plants are not growing well or are otherwise distressed for no apparent reason when first planted, toxicity may well be suspected. A simple check for this is to test grow some radish seed. Put some of the suspect growing medium in one