## MYCORRHIZAS (VAM DEFICIENCY)

In most soils cotton is dependent on mycorrhizal (VAM) fungi for successful growth. VAM fungi colonise roots and surrounding soil and act as an extension of the root system by supplying extra phosphorus and zinc. In return the plant 'feeds' the VAM fungi with sugars produced in the leaves. Cotton growth is reduced and maturity may be delayed when there are insufficient VAM fungi in the roots. Seedlings are stunted with small leaves and short internodes and phosphorus and zinc deficiency symptoms may be obvious.

VAM fungi cannot survive without a living host plant and their numbers decline during long, weed free, bare fallows or during rotation with a non-host plant (eg. canola, broccoli). In most cotton growing areas, however, sufficient VAM fungi will survive one season of bare fallow. Problems are more likely after longer periods of fallow. Loss or removal of topsoil can also eliminate VAM fungi and subsequent growth of cotton can be stunted with reduced uptake of phosphorus and zinc. The potential for yield reduction is greatest when the crop is planted late or during short seasons.

If a lack of VAM is suspected then a crop of wheat, which is usually less dependent on VAM fungi, could be grown prior to growing a VAM dependent crop such as cotton. Fertilisation during the crop is unlikely to be of benefit because P and Zn are relatively immobile elements in soil. Foliar fertilisers were ineffective in trials conducted at Narrabri. (See 'Mycorrhizas and Cotton – Research Review')