

## 10.1 Background

**Long fallow disorder occurs in Queensland and northern NSW when susceptible crops are grown in paddocks with low levels of arbuscular mycorrhizae fungi (AMF) and low levels of phosphorus and/or zinc. AMF levels can decline during fallow, when non-host crops such as canola are sown or prolonged periods of drought. AMF colonise plant roots and increase uptake of phosphorus (P) and zinc (Zn) from the soil and fertiliser sources.**

### **IMPACT**

In low phosphorus soils (Colwell P <10mg/kg soil), long fallow disorder can cause yield losses up to 80% in linseed, chickpea, maize and mungbean; 60% in sorghum and soybean and 30% in wheat and barley.

The effect of long fallow disorder is reduced as soil P levels increase. For example, yield loss in cotton was reduced from 89% to 54% by increased soil P from 8mg/kg soil to 18mg/kg soil, respectively.

### **WHERE DAMAGE IS MORE LIKELY**

Long fallow disorder occurs when:

1. AMF levels are low;
2. in paddocks with low soil phosphorus and/or zinc and
3. AMF dependent crops are grown in Queensland and northern NSW.

### **WHY TEST?**

- To identify paddocks with low levels of AMF so growers can make informed decisions about which crops to grow or avoid.
- PREDICTA B reports a combined result for two AMF tests under evaluation, linked to long fallow disorder. Provisional risk categories have been developed on the basis on two trials, so use as a guide only.