Northern Australia cotton disease survey report

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Summary

* Seedling diseases are unlikely to be a serious issue unless wet weather is experienced after sowing. Seedling pathogens favoured by cool conditions (eg *Rhizoctonia*) should be less prominent than those favoured by warm conditions (eg *Macrophomina*). High soil (sand) temperatures (up to 80 degrees C at the surface) in the Broome area, could cause direct seedling deaths because of heat damage to hypocotyls.

* Although Alternaria leaf spot is widely distributed in the north, its severity will be determined by the frequency of overnight dews with cool conditions and nutritional stress in cotton (especially potassium and phosphorus). Even with the exceptionally cool conditions this year the disease was not severe if crop nutrition was good.

* The presence of *Verticillium* at Kununurra indicates that mid-season conditions are favourable for that soilborne pathogen. Other soilborne diseases, including Fusarium wilt and black root rot pose a significant threat to cotton production if introduced.

* The origin of Verticillium wilt at Kununurra is uncertain. However, it is almost certain that the pathogen arrived as a result of agricultural activity, possibly in seed of other crops.

* The exclusion of Fusarium wilt, black root rot and other diseases is a very real and achievable prospect for each of the three regions that we visited.

* There seemed to be a general lack of knowledge or complacency that pathogens and weed species can be introduced to new areas. Bacterial blight was introduced to Broome in trial seed. We were not challenged on any occasion in Kununurra or Katherine as to the hygiene of our shoes and equipment (although we were at pains to point out the procedures that we had taken). This year the cotton trials at Katherine and Kununurra were visited by large numbers of 'tourists' from the cotton industry with little thought given to transfer of pathogens or weed species. It should be relatively easy to develop BMP for visitors and movement of trial seed to these geographically isolated areas but it may already be too late.