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Varietal selections

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There are a large number of varieties that can be selected and grown. Varieties are generally chosen based on yield, quality and disease resistance characteristics. However other traits such as determinacy, leaf shape and season length may also be important. The full range of cotton varieties available are outlined on the CSD web page (www.csd.net.au).

Yield

In irrigated production systems yield is the primary selection characteristic. Some varieties are widely adapted and can perform in a range of environments. Varieties in the Sicot 71 family have demonstrated exceptional yield performance in a wide range of environments. Other varieties such as the Sicot 43 family only perform well in specific short season environments.

Dryland production systems require varieties that yield well in water limited situations. The best dryland varieties are generally very indeterminant and have robust fibre characteristics.

The relative performance of cotton varieties can be compared online at www.csd.net.au using the variety comparison tool and the latest variety guide should be consulted to assist in selection.

The final yield of any variety is the product of its yield potential limited by the environment. It is worth your time to select the best performing variety for your farm. In fact different fields on your farm may require different varieties to achieve the highest yields. Varieties can be selected on past performance but most new varieties will have to be selected on their results in variety trials. Historically cotton growers change varieties rapidly to grow the higher yielding replacements. Cotton varieties bred in Australia have demonstrated a 1.8% increase in average yield per year, so newly released varieties may be the best choice for your farm

BE AWARE OF

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CSIRO breeder Greg Constable inspects CSIRO variety trials.

Quality

Australia cotton is regarded as some of the best in the world. Apart from lack of contamination the intrinsic fibre characteristics have been improved by breeding. Fibre length has been increased significantly in the last few years. Breeding has also increased fibre strength and has also reduced micronaire values down to the premium range. Some varieties such as Sicala 340BRF have exceptional quality and may achieve premiums. However Pima varieties such as Sipima 280 have the best quality and generally command a higher price for lint. There is an inverse relationship between yield and most fibre quality traits, but through careful selection breeders have been able to achieve high yielding varieties with good fibre quality.

Some fibre quality traits are more important in particular environments. In the hotter regions selecting varieties with lower relative micronaire may assist in minimising discounts and achieving premiums. In dryland situations selecting varieties with the best fibre length will reduce the chance of length discounts. Variety selection can also impact on grades. Okra leafed varieties sometimes achieve slightly lower grades than normal leaf varieties due to the leaves 'catching' on the plant and contaminating the lint. Careful defoliation and ginning will limit any grade loss.

For more information refer to the Managing for Fibre Quality chapter or to FIBREpak.

Disease

Breeding has provided the main method of managing our major diseases such as verticillium and fusarium wilt. The industry has developed a ranking system (F rank for fusarium and V rank for verticillium) to allow growers to compare the disease resistance of varieties. The ranking systems use a number system to compare new varieties to a standard. A rank of 200 would indicate the variety is immune to fusarium wilt and verticillium. The best commercial varieties available currently have an F rank of about 130 and a V rank of around 110. Breeding aims to improve the disease resistance over time and new varieties generally have improved F rank.

In fields with significant disease pressure, yields can be maximised by selecting varieties with the highest disease resistance. In the case of fusarium and verticilium selecting the most resistant varieties can reduce spore numbers in the soil, thereby reducing its impact on subsequent crops.

The latest disease rankings are available in the CSD Variety Guide and online at www.csd.net.au

For more information refer to the Disease Management chapter.

Okra leaf shape

The 'okra' leaf shape has been used in some Australian varieties since the early 1980s. It is a useful trait that has demonstrated some resistance to helicoverpa, mites and more recently whitefly. Varieties with 'okra' leaves have also been shown to be more water use efficient. However the trait requires careful breeding to achieve equivalent yields to the best normal leafed varieties.

Further information:
CSD – www.csd.net.au