1215 The evaluation of diffrent varieties of cotton in northern research station in Namibia since 1998/99 to 2006/7

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The different varieties of American and African Upland Cottons *(Gossyppium hirsutum)* were evaluated in Namibia since 1998/9 to 2004/05 under dry land and supplementary irrigation. The four varieties namely Tetra, Siokra V15, CA 223 and Delta opal were found to be suited for climatic conditions of Namibia. Since 1998/99 they were tested under dry land condition and supplementary irrigation to determine their agronomic potential in order to produce high yielding varieties as well as improved production technologies for varying environmental conditions prevailing in the growing region.

The varieties were tested and evaluated to introduce and recommend new varieties with high yield potential and high ginning out turn % and resistant to pest and diseases with good fibre quality. The performance compare with other cultivars showed good potential despite harsh environmental condition of Namibia. Their yield performance indicated that cultivar Tetra performed better than others of the three with the average yield of 0.89 t/ha of seed cotton under dry land conditions.

However the total average seed cotton yield of the four best varieties namely Tetra, Siokra V15, CA223 and Delta opal were 0,77 to 0,90 t/ha. The evaluation of different varieties of cotton at various research stations with different agro ecological zones for adaptability indicated that these varieties can be grown in Namibia successfully both under dry land and irrigated conditions. They are drought tolerant, but also perform well under irrigation, since they have very good recovery potential from dry conditions. They can produce good crops if managed well under small scale farming system.

All these varieties are early maturity, they can produce high yield if they are early establishment with good weeding pest control and adequate nutrition. They were fair to good pest and diseases tolerance especially to jassids and aphids which were the major sucking insects. However they micronaire values range from 3.3 to 4.3 good, and their fiber lengths 22 to 36mm medium to long staple and strength "between" 23 to 36 (g/tex) very strong, strong, average, intermediate to weak. The length uniformity less than 80% good, elongation less than 6 and ginning out turn or (GOT %) is less than 35% poor.

These varieties have also grown under the dry and irrigated condition in the Institute for Industrial Crops in Rustenburg and Loskop Republic of South Africa and Cotton Research Institute; Kadoma, Zimbabwe specially faces in Africa.

Therefore in Kadoma in 2001 to 2002 the recommended varieties were divided into middle and low veld dry land and irrigated. The best promise varieties were Albar SZ 9314 Middle staple, Albar RQ 902 Middle staple, LS 9219 Long staple and CY 889 Long staple. These four varieties have also be tested in Namibia for three growing seasons and were found to be suitable to abiotic and biotic stress of Namibia. Albar SZ 9314 was considered to be the best variety in Zimbabwe, because of high lint out turns, good fibre quality and middle staple, probably to be the best varieties in Namibia if have to be tested again in the future as it is already had indicated good fibre qualities in the three past growing seasons.

While LS 9219 variety was good options for the growers who have fertile soils in good rainfall and produces a high quality fibre that attracts premium prices.

It lint out turn for the three growing seasons in Namibia was only 35 to 36% poor; however most of them were susceptible to verticillium wilt diseases. This variety can grow in Namibia successfully only in area with good rainfall and good soil or under irrigation areas (Quton Seed Company variety Guide 2001/02).

The four best varieties namely Tetra, Siokra V15, CA223 and Delta opal were also graded between HX, HA and HB grades hand picked cotton according to RSA grading Standard. They have high ginning out turn and well perform under the harsh and erratic rainfall of Namibia. However to recommend good varieties in Namibia its need a thoroughly tested over a wide range of seasons and good sites to come up with the best varieties for each site or region and the varieties that were resistance to sucking insects such as aphids, leafhoppers (jassids) and for diseases such as alternaria, fusarium wilt, and wet weather blight t which are the common diseases in Namibia.