

Register of Australian Herbage Plant Cultivars

A. Grasses

9. Forage Sorghum

Sorghum spp. hybrid. (forage sorghum hybrids) cv. Silk

Reg. No. A-9d-5

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Origin

Selected by Dr A.J. Pritchard, CSIRO, from progeny of a hybrid plant resulting from cross-pollination between *Sorghum halepense* Pers. x *S. roxburghii* Stapf cv. Krish ($2n = 20$) and *Sorghum arundinaceum* Stapf ($2n = 20$).

Submitted for registration by the Division of Tropical Crops and Pastures, CSIRO, and recommended by the Queensland Herbage Plant Liaison Committee. Breeders' seed will be maintained by the Division of Tropical Crops and Pastures. Registered January 1978.

Morphological description (8)

Cv. Silk is a vigorous growing, erect and tussocky perennial, morphologically similar to *S. almum* cv. Crooble with exceptions described below. Silk produces more branched tillers, is slightly taller (3.2-3.8 m in height) at maturity, has smooth culms, ovoid in cross-section and slightly conspicuous bud grooves. Internode of culm may occasionally have a thickened ring. Leaves have margins that are smoother and less serrated, flanged membranous ligules, which are higher in the middle and develop pubescence with age, and sloping deltoid-shaped dewlap.

As with Crooble, the inflorescence is a pyramidal panicle but less compact with fewer secondary and tertiary branches. Spikelets are less persistent at maturity and pedicelled-male spikelets show more brown pigmentation on glumes with age. Glumes of sessile spikelets are rigid, shiny, dark reddish-brown to almost black, with accentuated lower dorsal keel, have slightly longer and more persistent coarse hairs, tightly enclosing a yellowish-brown, obovate caryopsis with persistent styles. Lemmas are often awned but the awns are rarely intact after antheses. Slightly larger caryopses (with glumes) numbering c. 148,000 per kg.

Electrophoretic isolation of various isoenzymes extracted from seeds, seedlings and leaves of Silk and Crooble failed to provide significant differences for identification purposes (2). Its chromosome number if $2n = 40$.

Agronomic characters (3,8)

As with Crooble, it is adapted to subtropical summer rainfall areas of Queensland and has been successful in Brazil and Argentina (5). Especially suited to semi-arid (500-750 mm) fertile heavy clay soils of Queensland. Under cutting conditions has remained productive for over 10 years. Able to regenerate from seeds or short, upward-growing rhizomes.

Easily established during spring and summer showing rapid growth rate, early tillering, and ability to compete against annual herbaceous weeds. Flowers 2-3 weeks later than Crooble, and yields less seed. Also, drought tolerant but more frost resistant. Under cutting and intermittent grazing, Silk consistently outyielded Crooble by 24-78% and by as much as 56% under 18 months of continuous grazing (6). In vitro digestibility data indicate it is consistently better than Crooble by 2-5 units, especially during late autumn-early winter. Palatable to cattle with total free sugars in the stem averaging 22.1% (oven dry weight) compared to 17.2% in Crooble during the vegetative stage of growth (1). Prussic acid content of young tissue only slightly higher than Crooble. In a trial at the Narayen Research Station (near Mundubbera, Qld), steers continuously grazing Silk at stocking rates from 1.5 to 3.0 beasts/ha gained an average of 150 kg liveweight/head/year compared to 140 kg by steers grazing Crooble. Since Silk retains more available green forage into early winter, steer gains

were significantly higher during this period (7) but at stocking over 2.5 beasts/ha a recovery period in spring was required to ensure persistence.

An important characteristic inherited from Krish is its resistance to major leaf diseases such as sugar cane mosaic virus (4), rust (*Puccinia* sp.) and blight (*Helminthosporium* sp.). Under grazing Silk is persistent over 3 years when sown with companion winter forage species (such as lucerne, medics and oats) in autumn, and compatible with summer legumes *Lablab purpureus* or *Glycine wightii*, to provide high quality and high yielding short-term leys.

Seedlings and young plants are easily eradicated with non-residual contact herbicides, while established swards can be grazed out at stocking rates over 2.5 beasts/ha within a year (7).

References

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