

Irrigated summer forage crops in Central Western N.S.W.

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During the hot, dry summers often experienced on the central western plains of N.S.W., cattle weight gains are restricted by low pasture availability. With irrigation, pastures or forage crops can be grown for summer feed; forages are especially useful because of their rapid growth, high dry matter production and ease of inclusion in the cropping enterprises practised on irrigation land.

The production of twenty summer growing forages was assessed at Trangie in 1977/78 and 1978/79. Cultivars included forage (ST6 and Magic), dual purpose (FS26) and perennial (Silk) sorghum hybrids, sudan grasses (Piper, QL18), maize, millets (Pearl, Japanese, Shirohie and Siberian) and legumes (Cowpeas and Dolichos). These were sown on a heavy alkaline soil in late November, dry matter yield was measured every three weeks beginning seven weeks after sowing.

TABLE 1. Dry matter yields ($t\ ha^{-1}$) at three stages during uninterrupted growth of representative summer forages in 1978/79.

Weeks from Sowing	Cultivars					
	ST6	FS26	Piper	QL18	Silk	Maize
7	5.4	6.3	2.9	2.2	3.9	4.0
13	19.0	22.0	11.3	11.0	20.2	19.0
19	20.9	26.9	12.1	19.9	20.3	17.5
	Pearl	Japanese	Shirohie	Siberian	Cowpeas	Dolichos
7	2.9	2.0	2.0	0.7	1.0	0.9
13	8.6	9.6	11.2	7.1	4.0	5.4
19	17.8	8.4	9.7	10.4	4.6	4.7

Highest yields were obtained from forage and dual purpose sorghum hybrids although the yields of maize and the perennial sorghum Silk were comparable at 13 weeks (Table 1). Maximum yields coincided with the end of flowering; in the cultivars ST6, Maize and Silk this was at 13 weeks. FS26 flowered 3 weeks later (early February) and hence continued growth until 16 weeks after sowing. The effect of late flowering was dramatically shown in two cultivars QL18 and Magic which continued growing until flowering at 19 weeks (early April). The cultivar Magic yielded $30.5 \pm 2.6\ t\ ha^{-1}$ at 19 weeks.

Millets do not have the yield potential of sorghum species but do produce higher quality forage (Hedges et al. 1978). Japanese and Shirohie millet grew faster than Siberian initially, with Shirohie yielding $11.2\ t\ ha^{-1}$ just after flowering; Siberian however flowered 2-3 weeks later and reached its maximum yield after 16 weeks. Leguminous forages produce only $4-5\ t\ ha^{-1}$ of dry matter. However, they have a role in improving the quality of forage mixtures and in crop rotations.

Hedges, D.A., Wheeler, J.L., Mulcahy, C., and Vincent, M.S. (1978). *Aust. J. Exp. Agric. Anim. Husb.* 18: 250.