

## ***Sweet Sorghum - A fine forage crop for the Beijing region, China***

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Sweet sorghum (*Sorghum bicolor* (L.) Moench) is a C4 plant, ranging in height between 3-5 m. It is not only known as a "high energy crop" for having a high photosynthetic rate, but it is also called "the camel among crops" with its characteristics such as drought resistance, tolerance to water logging and saline-alkali resistance as well as its wide adaptability. Sweet sorghum is a versatile crop that can be used for silage making, alcohol production and as a grain crop.

Since 1974, a large number of quality varieties of sweet sorghum has been introduced by the Beijing Botanical Garden. Comparative experimentation has shown that the yield of green forage of the varieties 'M-81E' and 'Theis' reached 128 and 125 t/ha, respectively (Table 1). Sweet sorghum is an excellent crop for silage making.

The sown area of sweet sorghum cv 'Rio' in the Nanjiao Livestock Farm of Beijing was increased from 10 ha in 1979 to 400 ha in 1982. The average yield of green forage of sweet sorghum per unit area was 76.8% more than that of maize in 1980 and 1981. According to the statistics of the Beijing Administrative

Bureau of Farming, since 1989 the sown area of 'M-81E' reached over 1333 ha in the outskirts of Beijing every year. Since 1991, the sown area of 'M-81E' has occupied 84% of the total harvested area in summer in the Beijing region. Because of the high yield of 'M-81E', an area of about 1300 ha could be used for sowing winter wheat and other grain crops. Most sweet sorghum is used for silage making.

There are similar situations in many other provinces and cities. In the Tianjin Municipality Worker-Peasant Alliance Agriculture-Livestock Farm, for example, the yield of green forage of sweet sorghum was 149% compared with maize and 191% compared with barley. The Institute of Agricultural Science of Changde District, Hunan Province showed that the biomass yield of 'M-81E' reached 125 t/ha, which is 181 % of that of maize.

Sweet sorghum can be grown not only in North China but also in South China. The total accumulative harvested area in recent years has been about 1000 ha in Bright Farm, Shenzhen City.

Table 1 shows the yields of different fractions of the crop of a number of cultivars tested in China.

It will be of great significance through popularisation of sweet sorghum as a silage crop to change the livestock farming structure by devoting greater effort to the development of grazing-livestock farming (cattle, sheep, rabbits, geese, etc.), in order to increase the total output of meat and reduce the pressure on grain used for poultry.



Harvesting sweet sorghum for silage making

**Table 1.** Mean yield of stalk, fermentable sugar, alcohol, fresh biomass and seed of sweet sorghum in experiments at the Beijing Botanical Garden

	CULTIVAR					
	Theis	M-81E	Wray	Keller	Brandes	Rio
Stalk (kg/ha)	95	89	76	76	62	52
Fermentable sugar (t/ha)	10.6	9.6	10.3	10.5	6.4	6.2
Alcohol (l/ha)	6159	5607	5981	6131	3696	3617
Fresh material (t/ha)	125	128	106	107	89	82
Seed (kg/ha)	6674	6213	1426	1960	3500	2866