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*Norghum*  
**SORGHUM**



**AN EARLY  
COMBINE  
GRAIN SORGHUM**

AGRONOMY DEPARTMENT  
**AGRICULTURAL EXPERIMENT STATION**  
SOUTH DAKOTA STATE COLLEGE BROOKINGS, SOUTH DAKOTA

# Norghum

## AN EARLY COMBINE GRAIN SORGHUM

By C. J. FRANZKE<sup>1</sup>

Norghum, an early grain sorghum, was developed to fit the climate and growing conditions of our state. It is early, stands up well, the seeds germinate rapidly at low temperatures, and the yields of grain have been consistently high. Formerly, grain sorghum varieties grown in South Dakota were introduced from the southern states and were not well adapted to our shorter growing seasons. Tests made in different areas of the state, show that Norghum is adapted throughout the state and should replace most of the older varieties now grown.

Nine thousand pounds of Norghum seed were released by the South Dakota Agricultural Experiment station to the County Crop Improvement associations in the spring of 1949. It is believed that Norghum will fill an important need for an early combine grain sorghum.

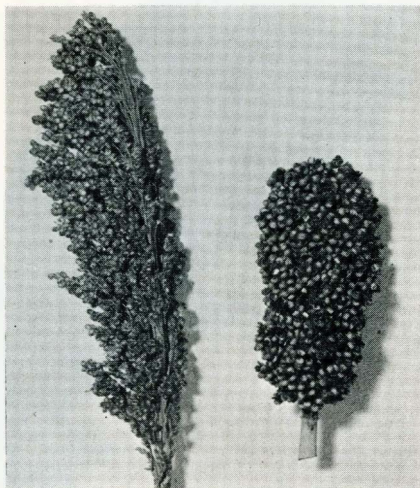


Fig. 1. Sorghum heads showing the spreading panicle type, Norghum, at the left and a compact panicle type, Midland, at the right.

### History

As its name implies, Norghum is a "sorghum of the north." It is a selection from a cross of (Dwarf Feterita x Dwarf Freed) x Yellow Kafir made in 1939. Dwarf Feterita x Dwarf Freed (H.C. 336) is a white seeded, late maturing grain sorghum with a very sturdy leafy stalk, and a compact head.

Yellow Kafir (C.I. 902) is a cross of Pink Kafir x Dwarf Yellow Milo and is a Kalo seed type with a medium slender leafy stalk, and a compact head. An early

maturing selection was made from this cross and tested throughout the state as well as in uniform sorghum nurseries in other states.

Norghum is a Kalo type grain sorghum. Both of its parents were obtained from the Branch Experiment stations at Hays, Kansas. The purpose of the cross was to develop an early maturing, high yielding strain of grain sorghum adapted to South Dakota conditions.

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## Plant and Seed Characteristics

Norghum is a combine grain sorghum which grows to a height of 36 to 46 inches. The stalks are medium slender and carry a fair amount of medium-sized leaves. The seed panicles are long, open and erect and are placed well above the foliage. (Fig. 1.)

Open panicle types allow better drying of the mature seeds than the closed or compact types such as Midland and Sooner Milo. The seeds are medium in size, reddish brown and mottled. The seeds germinate rapidly and at a low temperature. This is a very important character, especially for the northern states, in getting stands when planted early and under unfavorable growing conditions.

A summary of agronomic characters of Norghum and other standard varieties of grain sorghum tested at Brookings, Highmore, Eureka and Newell for the years 1946—49 is reported in Table 1.

Standability notes were taken in mid-November or later. Since all sorghum varieties eventually break over if left standing too late in the fall, it is necessary to plant early maturing grain sorghum which will mature and can be harvested before lodging takes place.

Mature plants of Norghum stand longer and resist lodging somewhat better than Sooner Milo or Early Kalo. Varieties such as Martin Milo and Midland Milo produced immature grain and therefore did not lodge as readily. More lodging occurs where the crop is badly stunted and killed by drought in the late summer.

As indicated in Table 1, Norghum ripens before frost and can be harvested by mid-September. Other grain varieties are later in maturing and often freeze, producing poor quality grain. Norghum is a short stalk sorghum and can be combined readily.



Fig. 2. A foundation field of Norghum.

**Table 1. Summary of Agronomic Characters of Norghum, and Four Standard Varieties of Grain Sorghum Tested at Brookings, Highmore, Eureka and Newell for the Years 1946—49**

Variety	4 yr. Av. Range of Maturity	B	Date Headed				Height Inches				Standability Percent			
			H	E*	N	B	H	E*	N	B	H	E*	N	
Norghum	Well-matured	7-25	7-31	8-8	8-6	45	37	43	38	89	70	75	73	
Sooner	Soft dough-Matured	8-9	8-10	8-17	8-20†	48	41	38	33†	77	47	63	71†	
Martin	Headed to Hard Dough	8-10	8-15	8-19	8-22	38	33	44	30	81	77	83	90	
Midland	Headed to Hard Dough	8-9	8-12	8-18	8-17	45	39	44	35	85	77	60	90	
Early Kalo	Soft Dough to Mature	8-1	8-11	8-14	8-18	47	41	50	33	77	35	45	72	

B—Brookings; H—Highmore; E—Eureka; N—Newell (Dry Land)

\*Data for years 1946, 1947 and 1949

†Data for years 1946, 1947 and 1948

## Yield

The yield of Norghum in comparison with four standard varieties is shown in Table 2.

It will be noted that the grain yields of Norghum were consistently high each year at the three locations. The higher grain yields for Norghum may be attributed to its maturing before frost. Late maturing sorghums when frosted pro-

duce shrunken and light test weight grain and cure slowly in the field. They cannot be combined or threshed early in the fall. Norghum can be harvested and threshed before hard frost has impaired the germination of the seed and before the stalks break over. It is adapted to all parts of South Dakota.

**Table 2. Summary of Yield Data of Norghum and Four Standard Varieties of Grain Sorghum Grown at Brookings, Highmore, Eureka and Newell for the Years 1946—49**

Variety	Bushels per acre			
	Brookings	Highmore	Eureka*	Newell
Norghum .....	54.8	40.8	20.6	34.3
Sooner .....	39.2	21.6	7.5	16.6*
Martin .....	25.1	22.4	8.7	9.4
Midland .....	32.1	23.5	7.5	14.3
Early Kalo .....	43.8	21.6	10.5	7.9

\*Data for years 1946, 1947 and 1949