



Sorghum bicolor

Family name: **Poaceae**Common name: **Poaceae**

Local name: (عيش), (Durra, درة)



Cultivated



Role in Biodiversity

Sorghum is one of the earliest plants cultivated by man and in Sudan. There are many local varieties of Sorghum. It is an important food source for pollinators and other beneficial insects. sorghum could provide a food source to at least 29 families of Hymenoptera and other beneficial insects and could be promoted as a valuable landscape planting for preserving these insects. It is also an important source of food for migrating birds such as white wagtail and hoopoe as well as for local birds such as sparrows and pigeon. Sorghum is sometimes attacked by locust, which often feed on leaves.



Environment and Growing

Sorghum likes the sun and heat. It is a quick growing plant, tolerant to drought and heat stress. It is tolerant of salinity and to some extent to waterlogging for a short period. It grows well in well-drained sandy to clay soil.

Growth requirements:

- Temperature for germination is 20–32 °C.
- Optimum air temperature range 15–40 °C.
- Annual rainfall range 250–1250 mm.
- PH range 5–8.5.



Reproduction and Communication

- The fertile floret is bisexual
- Sorghum is primarily self-pollinated, but some wind pollination occurs.
- Following pollination and fertilization, the fertile bisexual florets mature into fruits (grains).
- Sorghum is propagated mainly by seeds and can be rooted for a second crop, especially for animal feed.



Life span

Sorghum is a short day plant requiring 90 to 140 days to mature depending on climate and type of cultivar.



Size

0.6- 2.4 m high



Parts



Unbranched culms. Stalks and leaves are coated with a white wax, and the pith, or central portion of the stalks of some varieties is juicy and sweet. .

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Leaf sheaths encircle the culms and have overlapping margins. The leaves are about 5 cm broad and 76 cm long. They are cauline, with base broadly rounded, glabrous and waxy.



Primary and secondary roots are temporary, eventually dying as their function is taken over by adventitious roots.



The tiny flowers are produced in panicles that range from loose to dense. Each flower cluster bears 800–3,000 kernels. Flowers vary in colour from pale yellow through reddish brown to dark brown depending on the cultivar, in spikes up to 40 cm long, loose and open.

Fruits (grain) are dry indehiscent known as a caryopsis.

Seeds are small, round, and usually white or pale yellow. Some varieties are red, brown, or purple.

INTRODUCTION

Herb

Sorghum bicolor, the great millet, is a tall grass originated in Africa, and is now cultivated widely in tropical and subtropical regions. It is **fast growing and drought tolerant** and can survive in cool climates and in waterlogged habitats. Sorghum is a strong grass carrying plumes of seeds similar in size and flavour to millet. It is the world's fifth-most important cereal crop after rice, wheat, maize, and barley.

In Sudan, sorghum like millet is cultivated mainly in Gadarif, Gazeira, White Nile, River Nile, and North Kordofan states. It is an ancient grain that has been cultivated across Sudan for millennia. It provides a staple crop for food and animal fodder and the straw has multiple uses. As a cereal it is high in fibre and nutritious but, unlike wheat, it is gluten free. Sorghum is a basic ingredient in traditional cooking and medicine and has potential as a sustainable crop resistant to climate change.

LIVELIHOODS / CULTURE

Cultivation

Land preparation: A few weeks or days before planting seeds, farmers prepare the field. They begin by plowing the land manually using traditional tools, **wasoog**. Sometimes they use cows to help them pull a plough. They remove any previous agricultural residues and weeds from the field and design the irrigation canals depending on soil level. All community members usually participate in this step.

<https://x.com/SUDAN00000/status/1391596339637653504>

Seed sowing: When the soil is ready, farmers use simple tools, **seloka**, **toria**, and **jelamoy**, to make holes at equal intervals and use their hands to spread the seeds into these holes. All community members usually participate in this step.

<https://x.com/SUDAN00000/status/1497504403129094144>

Watering: Farmers depend on the flow of water from large canals connected to rivers on a slope, so the water flows into small streams using gravity. In case of water shortage, farmers use small pumps to help them lifting water from the main canals. In rain-fed agriculture, farmers do not use irrigation channels. The groundwater after rain is sufficient until harvest time. Men usually do this work.

Weeding: Weeding is done by hand using special tools, **malod**, **jeraya** and **hashasha**. All community members usually participate in this step.

Cutting/collection: After maturity, farmers cut the heads of sorghum manually using hand made tools and collect them in a specific place called **al taga** which is an area of land that is not cultivated but is used after the crop matures to collect the sorghum heads and separate the grains from the plant. Men usually do this work.

Threshing: the **al taga** is cleaned from weeds and soil cracks are filled and smoothed with clay mixed with weed remains. Using sticks with the heads called **modgag**, they hit the sorghum heads.

In the past this process was of great importance. Rituals and preparations were performed, including food and drinks. Relatives usually invited from distant villages. The process of might extend for consecutive days. Strong men gathered and sang songs of encouragement.

Cleaning: The process of cleaning the grains after being separated from the heads is called *Darat Al Gern* – the *gern* is the entire harvest collected in one heap. This process is performed by women. They separate the grains from any unwanted parts specially the glumes or **potab**, and then threshing as the last step. The grain is often tossed in the air to get rid of impurities instead of using a sieve.

Grain storing and distribution: Finally, the cleaned grains stored in places in the house called **al suwaiba**. Or, in some villages, they bury the whole crop in the ground in a hole called **matmora**. The **matmora** is usually made as a storage place for the crop of the whole community. Farmers use donkeys and **karoo** (a small two-wheeled cart pulled by a donkey) to distribute individuals' share of the crop. They also use **karoo** to transport the crop for sale in local markets. Men and young boys usually do this work.

Straw and field stubble: Straw is also collected and stored for fodder or the Sorghum stalks are left in the field for the animals to graze as they stay green for some time. All these practices are usually shared between community members: men, woman and young boys who are usually relatives.

Cultural Value

Sorghum is used in preparing traditional meals in most parts of Sudan. **Kisra** and porridge are made from fermented sorghum dough and **abri** and **helomer** are the two main drinks in Ramadan. In addition sorghum provides:

- Grain and straw for livestock feeding
- Sorghum stems for making mats, hut walls or **rowakeeb**, filling materials in building roofs and for roofs of animal shelters or **zareeba**.
- Simple traditional music instruments. These are made from the hollowed stem of dried sorghum, **sofara**, **zombara**, and used by pastoralists to call animals or for fun.

Medicinal and health uses

In many parts of Sudan sorghum flour is mixed with water and fermented and used uncooked to treat stomach ache. The flour can also be mixed with water, fermented and cooked then taken as a drink, **nsha**, to treat anemia and dehydration.

Cultural Expressions

Harvesting song:

<https://ms-my.facebook.com/sudan1s/videos/744562585730710/>

THREATS

Sorghum is an adaptable and resilient plant, however, crop yields are substantially affected by a late rainy season, or not enough rain during the growing season. Poor farming methods can also affect crop yields through soil degradation. This in turn increases the vulnerability of the growing areas to extreme weather events such as heat or flooding, which can ruin a crop, and increase the likelihood of desertification. These effects can be amplified by the overuse of insecticides, chemicals or other pollutants, which decrease beneficial insects like pollinators. The general loss of land fertility and productivity reduces biodiversity and has a negative on human livelihoods and culture. These can lead to migration and conflict.

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