Fact Sheet - **Plants of Sudan**

Arachis hypogaea

Family name: **Leguminosae**

Common name: **Leguminosae**

Local name: **Ful Sudani (فول سوداني)**

Cultivated

Role in Biodiversity

Peanuts are an important legume in the world for oilseed, food, and animal feed. It is also a soil nitrogen-fixing crop that is safe, cheap, and eco-friendly for the soil environment.

Environment and Growing

Peanuts are best grown in tropical climates with warm weather but some species are cold tolerant. The best soils are well-drained sandy loams underlain by deep friable (easily crumbled) loam subsoils. It prefers clear days with lots of sunlight for optimum production.

Growth requirements:

- Five months of warm weather with rainfall (or irrigation equivalent) of 60 cm or more during the growing season.
- pH range 6.0-6.5.
- Temperature range 25-30° but can withstand temperatures below 15°.

Reproduction and Communication

Peanut plants reproduce by sexual and asexual processes.

Sexual reproduction: Flowers tend to self-pollinate before the flower opens. Cross-pollination aided by insects can occure occasionally. After fertilization, the ovary elongates to form a peg that grows downward into the soil, pushing the fertilized ovary underground where the ovary enlarges and matures into a pod. Many different insects have been observed visiting peanut flowers, however, these flowers are only a minor source of pollen and produce only small amounts of nectar.

Asexual reproduction: Through vegetative propagation, although this is not common in agricultural practices. Stem cuttings or tissue culture techniques can propagate the plant under controlled conditions.

Life span

The lifespan of Arachis hypogaea is typically 3 to 5 months from germination to harvest.

Size

The peanut plant is 45–60 cm high with branches that spread 30–45 cm long.

Parts

Stems are sturdy and hairy. The main stem develops from the terminal bud on the epicotyl while the two lateral stems, equal in size to the central stem, develop from the cotyledonary auxiliary buds.

Edit / Translate

A peanut plant has taproot that grows deep into the soil, reaching a depth of up to 1.5 meters (5 feet). It is thick and spindle-shaped, has four series of spirally arranged lateral roots with abundant branching, usually with a large number of nodules.

Leaves are pinnately compound with two pairs of leaflets carried on the stem, oval shaped and between 1 to 7cm long.

Flowers are carried in the axils of the leaves. They are golden-yellow and about 10 mm across.

Fruits are oblong pods with rounded ends and are most commonly 25–50 mm (1–2 inches) long with two or three seeds; the pods are contracted between the seeds and have a thin, netted, spongy shell.

The seeds vary from oblong to nearly round and have a papery seed coat that ranges in colour from whitish to dark purple.

INTRODUCTION

Herb

Arachis hypogaea, groundnut, is a herbaceous perennial legume that is cultivated mainly for its popular edible seeds known as peanuts. It is native to Central Brazil and reported to have been domesticated in Paraguay or Bolivia around seven thousand years ago. It is now cultivated throughout the tropical and warm-temperate zones. This plant is characterized by branches that lie close to the soil with 1-4 seeded pods that mature underground. Commercially it is used mainly for oil production and also as a sustainable, significant source of protein.

Sudan is one of Africa's top groundnut producers and exporters. It is cultivated mainly in North and South Kordofan where it is known for its high quality. It is also cultivated in Darfur and Gezira states. It is grown in Sudan mainly for the purpose of extracting oil, and it is also eaten as nuts or butter.

LIVELIHOODS / CULTURE

Cultivation

Peanuts are planted from the beginning of June until mid-June in the irrigated sector. Delaying planting leads to a decrease in production by 23-40%. In the rain-fed sector, it is planted in the first week of July and at the latest mid-July.

Land prepration: Peanuts are one of the crops that should not be planted in the **same field** every year. A plan must be followed to rotate crop cultivation. The soil must be prepared to be free of large stones, tree roots and trunks, as well as chemical waste.

Seeds sowing: Peanut seeds or beans can be planted whether they are peeled or unpeeled. Three to five seeds are planted in a hole 5-7cm deep spaced 17-20cm apart. In rainfed areas farmers usually plant beans at 60cm between the rows and 20cm between the plants. This is equivalent to a density of 70,000 plants per acre. In irrigated lands, 50 kg of peeled seeds are planted per acre, at a rate of two seeds per hole, so that the plant density reaches about 90,000 plants per acre.

Watering: Watering should be at a rate ranging between 25-50 mm every week. The soil in which peanuts will be planted must also be well-drained. At first, the land is irrigated immediately after planting, then irrigated again after 50% of the roots have sprouted. Sandy soil is irrigated by drip irrigation three or four times a week. In non-sandy soil, it is irrigated once every 5 to 8 days. Flood irrigation is once every 7 to 10 days in the case of fertile and red soil. Drip irrigation in fertile soil is twice a week. Commonly, beans are irrigated every 14 days after planting until harvest..

Weeding: When the plant begins to grow and reaches a length of 15 cm, the process of cleaning it and removing harmful weeds begins. Weeds are removed twice a season within a period not exceeding 45 days from planting. The first is 2-3 weeks from planting and the second is 4-5 weeks from planting.

Harvesting: The average lifespan of peanuts, depending on its type, is from 110 to 130 days. Farmers use their hands and also several types of plows and tools such as the regular bean thresher machine. Farmers take advantage of the opportunity when the soil is neither too wet nor too dry to dig and harvest. Beans should be harvested 100-110 days after planting because delay will result in a 22% decrease in production. After harvesting, beans are dried by leaving their fruits facing upwards and exposed to direct sunlight and fresh air. Beans are dried for 8-12 days to prevent contamination.

Storing: After harvesting, the peanuts are cleaned and sorted to remove damaged fruits and other foreign impurities. Properly ventilated warehouses with a good roof, double side walls and a cement roof are required to prevent moisture from reaching the peanuts.

Cultural Value

Peanuts are one of the most important components of daily food in Sudanese culture. They have great economic, nutritional and health benefits. Peanut oil is used for cooking in almost all parts of Sudan, and peanut butter, known as ***dkowa***, is added to many popular dishes.The remainder of the peanut plant after harvest, in addition to the husk of the fruit, is used as good fodder for animals, especially cows and donkeys.

Uncooked peanuts without any additives are used to treat heartburn, especially among the elderly, in almost all parts of Sudan.

Cultural Expressions

Information not available.

THREATS

- Climate change: Traditional small-scale agriculture in the states of Western Sudan produces 70% of the country's peanut crop. Because peanuts depend on rainfall for their growth, the devastating droughts these areas have experienced have greatly affected farmers' ability to produce significant yields.
- Aflatoxins production: These are secondary metabolites produced by toxigenic strains of Aspergillus flavus and Aspergillus parasiticus under suitable environmental conditions during pre- or post-harvest operations, downgrading the grains and oilseeds. The contamination of seeds occurs as a result of poor pre- and post-harvest practices.

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