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Building Resilience to Enhance Food & Nutrition Security, Incomes and Health in Northern Uganda (BRENU)

SPINACH PRODUCTION GUIDE



Implemented by:



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In order to achieve good growth and maximize spinach yields, growers may take into consideration the following key factors

BACKGROUND

Origin and Distribution

Spinach originated in Iran. The Arabs introduced spinach into Africa. It was first cultivated as a medicinal plant but was eaten by monks on feast days by 1551 AD.

Climatic & Soil Requirements

Spinach seeds germinate at 2°C to 30°C. However, 7°C to 24°C is optimum. Seeds will not germinate well in warm weather. Although spinach will grow in temperatures ranging from 5°C to 24°C, growth is most rapid at 15°C to 18°C. The plant requires a constant and uniform supply of water in order to obtain a good crop of high quality. During spinach production, the soil should never be allowed to dry out. Spinach requires plenty of water, although the soil should have good drainage.

Spinach grows well on a variety of soils, although fertile, sandy loams with a high organic matter content are preferred. Heavier soils can be quite productive if these are well drained and irrigated with care. Spinach is

particularly sensitive to saturated soil conditions and to acidity. The optimum soil pH is 6,2 to 6,9.

Importance of spinach

Spinach is used raw in salads and cooked as a potherb. The leaves may also be canned or quick frozen.

Spinach can be used as a source of vitamin A, B1, B2, niacin and calcium. The crop also has a hypoglycaemic effect that can be used in treating urinary calculi and lung inflammation. The seeds can be used as a laxative and for treating breathing difficulties and liver inflammation.

CULTURAL PRACTICES

Planting

Spinach is propagated by seed that is found inside the fruit as a result of fertilisation. The soil will have to be ploughed to a depth of at least 20 cm and then harrowed.

Harrowing should be done very thoroughly for the land to be flat, especially on irrigated land, so that the water can flow evenly. The seed is broadcast or sown in rows on

wide beds. Spacing should be 50 to 60 cm between the rows and 15 to 20 cm between the plants in a row. If the spinach crop is seeded directly, the planting depth should be about 20mm. However, the depth of planting on heavy soils should be much shallower than that of the light soil for ease of germination and emergence. In Uganda, spinach can be planted from March until October. Slight variations in planting date may exist because of the micro and macroclimate variation and taking into account the rainfall patterns and variation in this country.

FIELD SELECTION

For organic production, give priority to fields with excellent soil tilth, high organic matter, good drainage and airflow.

SPINACH YIELD PER HECTARE

The average spinach yield is 20-30 tons per hectare. (Keep in mind that 1ton= 1000 kg and 1 hectare = 2,47 acre = 10.000 square meters.)

SPINACH HARVESTING

Spinach plants for fresh market are harvested in one cut (the whole plant is destroyed) about 38- 55 days from seeding. Spinach leaves that target processed market are harvested at about 60-80 days from seeding.

PLANT SPACING

Space between rows 7-11 inches (20-30 cm) and space between plants in the row 3-6 inches (7-15 cm).

SEEDING RATE

The recommended seeding rate is 8-12kg of seeds per acre.

THINNING

Thinning is used, in order to encourage plants to produce a great leaf surface. This is the most common technique when we grow spinach for processing market.

WEED MANAGEMENT

Hand-weeding is an expensive component of the crop production. A more economical alternative is to hoe the field when weeds are small and have not flowered yet. Sometimes two hand-hoeing methods may be

necessary. Shallow cultivations are also used to control the weeds on spinach fields. Only registered herbicides can be used during the production of spinach. A typical weed control programme includes the use of a preplant incorporated or a pre-emergent herbicide. This herbicide is applied before the plants are planted and after planting but before emergence. The most effective and efficient control of weeds is by integrated

PEST MANAGEMENT.

Pest and Disease Control

Spinach leaf miner and aphids are the most frequent pests of spinach. Control can be done by destroying infected crop residue and weeds. Also use registered pesticides. Apply management strategies for diseases and pests, including crop rotation and spraying with registered insecticide and fungicide. An integrated pest management programme can be followed.

Diseases include downy mildew, fusarium wilt and yellow rot, spinach blight or yellows and damping off. These can be controlled by

treating the seeds with a registered chemical immediately before planting; by planting resistant cultivars; avoiding planting when the soil temperature is high; practising 3-year crop rotation; and considering hot water treatment of the seed.

NB: Weeds not only compete with spinach in terms of nutrients and access to sunlight. but they will also prevent proper aeration, thus creating the perfect conditions for disease outbreaks. To be successful, use an integrated approach to weed management that includes crop rotation, cover cropping, cultivation, and planting design, based on an understanding of the biology and ecology of dominant weed species.

