



Blackjack

— Production guideline —



agriculture,
forestry & fisheries

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GENERAL ASPECTS

Classification

Scientific name: *Bidens pilosa* L.

Family: Asteraceae

Common names: Blackjack, Gewone Knapsekêrel, Umhlabangubo, Uqadolo, Mushiji, Mokolonyane and Muchize

Origin and distribution

Blackjack originated from South America and is common in all tropical and subtropical areas of the world. It is recorded as a weed in cultivated land and used as vegetable or pot herb in many African countries such as Kenya, the Congo, Botswana, Zambia, Zimbabwe, South Africa and Mozambique.

The plant is distributed throughout tropic Africa. It is a common, widespread and extremely troublesome weed, being found in most disturbed areas.

Production levels

South Africa

Blackjack is growing naturally in homestead gardens in the KwaZulu-Natal and Limpopo provinces. It is widely harvested as a weed and is also cul-



tivated. There are no statistics on the total area under cultivation and the volumes traded in South Africa. It is usually found on the local markets early during the rainy season when other fresh vegetables are scarce. It is collected from the wild by both rural and urban households and it is reported that approximately 21% and 49% of leaves are collected in urban and rural KwaZulu-Natal households, respectively.

International

Blackjack grows in the wild in most countries such as China, Spain, Peru, US, Australia, Brazil, Taiwan, India, Quechua, Bolivia, Mexico, the Caribbean and Dominica and Martinique. It is frequently found in many local markets in small quantities as a vegetable and medicinal plant.

The young plants or leaves and shoots are collected from the wild or from the field during weeding. Small-scale cultivation has been reported from Nigeria, Benin and Zimbabwe. There are no statistics on the total area under cultivation and the volumes traded.

Major production areas in South Africa

In South Africa blackjack grows in the wild and homestead gardens in the KwaZulu-Natal and Limpopo provinces.

Description of the plant

Mature plant



Blackjack is an erect, slender, branching, annual herb growing up to 100 cm in height.

STEMS

The stems are erect, ramified, square and hairless, up to 120 cm tall. It has spreading branches, when the season progresses. The major branches tend to sprawl and root at the lower nodes where they touch the ground.

LEAVES

The leaves are opposite and are divided into 3 to 5 leaflets with toothed margins. The terminal and lateral leaflets are ovate to lanceolate shaped. The stalk of a leaf is very slightly winged.

FLOWERS

The flowers are small, white and yellow in colour and are 5 to 15 mm in diameter. They are borne on long, slender stalks at the end of the stems. Each flower head has 4 or 5 short, broad, white petals with numerous, yellow disc florets. It flowers from October, but occurs throughout the year but primarily in summer to autumn. The flowers have both male and female organs and are pollinated by bees.

FRUIT

The fruit of the blackjack is unpleasant, hairy and able to penetrate rapidly through several layers of clothing. It has a dry, pronged fruitlet with hooks.

SEEDS

Seeds are small, black and slender with little claws on one end. The seeds can stick to clothes or to animals' fur. The seeds are 4 angled, 6 to 12 mm long with 2 or 3 barbed awns (stiff bristles).



Essential parts

The fresh leaves and young shoots are essential parts.

Climatic and soil requirements

Temperature

Blackjack prefers hot weather conditions. It grows well in temperatures ranging from 25 to 38 °C. Temperatures above 45 °C are not favourable and it cannot tolerate frost. It grows well in sunny or slightly shaded areas.

Rainfall

Blackjack thrives with abundant rainfall, but can withstand droughts. The optimum rainfall for growth ranges from 500 to 800 mm.

Soil requirements

Blackjack grows in fertile soil in the wild, planting fields and gardens. It prefers light, medium and heavy soils, but thrives in loose soil high in organic matter. It also thrives in deep, well-drained soil. It can grow in a soil pH range from 4 to 9 and can tolerate saline soil.

CULTIVATION PRACTICES

Propagation

Blackjack is propagated by seed.

Planting

Seeds are sown early spring in a greenhouse and the seeds must be covered. When the seedlings are large enough to handle, they must be picked out into individual pots. The sowing can be tried in mid to late spring.

Blackjack plants grow fast; flowering starts 6 weeks after emergence and continues until plant senescence 2 to 3 months later. The first seeds mature 4 weeks after flowering. Each plant bears at least 80 flower heads with a potential production of 3 000 plants in a single generation.

The seed can also be broadcasted or sown in rows and the seedlings thinned out to 10 to 15 cm. As a vegetable, the plants are ready for harvesting within 4 to 6 weeks of emergence, before seed setting. Deflowering is necessary to retard senescence and maintain growth.

Fertilisation

The shrubs need to be fertilised often and it is recommended to use manure to enrich the soil at the end of winter. Fertilise every 20 to 25 days when watering. Use granular fertiliser for 3 to 4 months, if the shrubs are large. In spring, the use of nitrogen and potassium is recommended to favour the development of new vegetation and flowerings.

Irrigation

The plants can be watered from time to time; the soil must be watered deeply, using 1 to 2 bucketfuls of water every 2 weeks.

Weed control

Blackjack often germinates in dense mats. This uniform, shallow germination fortunately means that they are relatively easy to control, especially with post-emergence herbicides. Because of the large seeds, pre-emergence control can be erratic.

Pest control

The most common insect attacking blackjack is aphids. At the end of winter, the applications of insecticides are recommended to prevent the attack from aphids.

Diseases control

Blackjack is susceptible to fungus diseases, which should be treated with systemic fungicides. The treatment should be done when there is no flowering taking place in the garden.

Harvesting

Harvesting maturity

The first harvest is 4 to 6 weeks after sowing, when the plants are 15 to 30 cm high. If the plants are topped, a second harvest can follow after 2 weeks. Up to 6 harvests are possible. Although they are not as perishable as most leafy vegetables, the leaves intended for marketing are harvested late during the day or early in the morning so that they remain fresh for marketing.

Harvesting methods

Harvesting is done by hand picking, cutting or uprooting.

POST-HARVEST HANDLING

Packing

Harvested tender leaves, shoots or whole young plants are washed and tied into bundles.

Storage

Blackjack cannot be stored for more than one day. The leaves can be stored in a fridge or consumed after harvest. Leaves may also be parboiled and then dried in the sun for later use.

Marketing

Fresh tender leaves, shoots and young plants are collected for household consumption and sometimes sold at local markets.

PRODUCTION SCHEDULE

Activities	January	February	March	April	May	June	July	August	September	October	November	December
Planting										X		
Fertilisation									X			
Pest control								X				
Harvesting												X
Marketing												X

UTILISATION

Human consumption: Blackjack tender leaves and young shoots are used as a leaf vegetable. Sundried powdered leaves are preserved to be used

during dry seasons or winter. The young plants are said to have a high food value although the leaf has an astringent taste.

Medicinal use: Blackjack is used as a medicinal plant in many regions of Africa. Roots, leaves and seed have been reported to possess antiseptic and anti-inflammatory properties. Decoctions of powdered leaves are reported to be helpful in treating many ailments such as arthritis, abdominal trouble, headache, diarrhoea, etc.

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Further information can be obtained from

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NOTES

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