

## BUFFEL GRASS



Buffelgrass (*Cenchrus ciliaris* L.), is a perennial species that grows to a height of 120cm. It is native to Africa, west and south Asia, and has wide adaptation and grows in the dry and hot regions in Asia, Africa, Australia, and Europe. Buffel grass has a range of forms, from tall with rhizomes to short tussocks. The leaves are linear, 3–25 cm long and 4–10 mm

wide. It is tolerant to soil and water salinity and develops deep roots which enables it to tolerate drought. Buffel grass can be grown using 10 dS/m irrigation without any yield penalty. The grass can be grazed green or processed to make dry forage. Both vegetative and seed propagation methods are used for its cultivation.

### Crop requirements

#### Climate and soil preparation

Buffel grass can grow in lighter textured soils but has a high phosphorus requirement that needs to be met for successful production. Slow initial growth has been reported on heavy clayey soil but once established, the grass goes well. Buffel grass is adapted to soils with a pH ranging between 6 and 8.

Both high aluminum content and acid soils has a detrimental effect to the growth of buffel grass.

Buffel grass grows at high altitudes of up to 2000 masl. It is a short-day plant and the optimum temperature is around 35 °C. The grass grows in places where the average daily temperature is between 12-18 °C while it can tolerate lower night temperatures of about 5 °C.



## Crop cultivation

### Crop establishment

A well-drained and finely prepared seedbed is required for the establishment of buffel grass. A planting depth of 1-2cm covered with a thin layer of soil is recommended at establishment. Machine sowing is recommended for large fields to increase efficiency. A good seed to moist soil contact is required in the 4-5 days prior to germination of the seed. Similar seedbed conditions will be required to successfully establish Buffel grass using vegetative propagation methods. Appropriate spacing ensures the uniform establishment of Buffel grass. A spacing of 1m between rows and 0.5m to 1m within a row is recommended.

### Water management

Buffel grass requires water at the establishment. Once established, Buffel grass is drought tolerant and can be grown

to maturity with minimal irrigation and rainfall of less than 300mm. However, supplying ample irrigation water increases Buffel grass biomass production significantly. Buffel grass is highly salinity tolerant and can adapt to irrigation water of up to 15 dS/m salinity.

### Fertilization

Buffel grass requires adequate nitrogen, phosphorus, and calcium fertilization to reach its potential yield. A fertilization rate of 60 kg N + 30 kg P<sub>2</sub>O<sub>5</sub> + 40 kg K<sub>2</sub>O is recommended. Addition of micronutrients such as calcium is recommended to increase yields.

### Pests and diseases

Diseases such as blight caused by the fungus *Magnaporthe grisea*, *Fusarium oxysporum*, *Bipolaris* sp., and *Claviceps* sp can reduce yields. Buffel grass seed caterpillars (*Mampava rhodoneura*) need to be controlled.

## Harvest, postharvest and storage

Cutting fresh forage just at the beginning of flowering is recommended for high nutrition feed. Cutting at growth stages beyond flowering results in lower quality fodder. Harvesting can be done manually or using mechanized methods depending on

the size of the area under production. Store harvested forage in cool, dry conditions to prevent mold and spoilage. Clean and dry seeds to a moisture content of around 10% before storing in sealed containers to maintain viability. Depending on growing conditions and variety, seed yields range from 10-60 kg/ha.



ICBA is an international not-for-profit applied agricultural research center with a unique focus on marginal environments where an estimated 1.7 billion people live. It identifies, tests, and introduces resource-efficient, climate-smart crops and technologies that are best suited to different regions affected by salinity, water scarcity, and drought, among other factors. Through its work, ICBA helps to create jobs and improve livelihoods, food security, and nutrition for some of the poorest rural communities around the world.

+971 4 304 63 00

**ICBA Headquarters**  
Academic City, Al Ain Road Al  
Ruwayyah 2, Near Zayed University  
Dubai, United Arab Emirates  
P.O. Box 14660

icba@biosaline.org.ae

www.biosaline.org