



Para Grass (*Brachiaria mutica*): A Pasture Grass for Wet and Flooded Soils

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At present, the country faces a net deficit of 61.1% green fodder, 21.9% dry crop residues and 64% feeds. The situation is further aggravated due to increasing growth of livestock particularly that of genetically upgraded animals. The available forages are poor in quality, being deficient in available energy, protein and minerals. To compensate for the low productivity of the livestock, farmers maintain a large herd of animals, which adds to the pressure on land and fodder resources.

Introduction

Para grass (*Brachiaria mutica*) is a coarse, vigorous, trailing perennial which is useful for wet and flooded soils in the higher rainfall areas of the top end of the Northern Territory (NT). It has stout runners (stems, stolons) which branch and root readily at all nodes. The runners grow up to 5 m long, but the sward grows only to a height of 1 meter (m). Leaves and leaf sheaths are generally hairy; leaves are 6-20 cm long and 1-2 cm wide. The seeds are small, numbering about 935000/kg. It is also called buffalo grass, mauritious grass, water grass, angola grass, etc. Origin of Para grass is native of South Africa, which has been introduced into many tropical countries. It is considered to be one of the best tropical grasses for general pasture. In India, it was introduced in Pune, Maharashtra from Sri Lanka. It is extensively cultivated in Kamataka, Kerala, Tamil Nadu, Bihar, Assam, Manipur, Punjab, Uttar Pradesh and Orissa. It is a perennial grass, staying in the field for three to four, years and is heavy yielders if well manured. It is a quick spreading grass with long aerial stolons and which roots at the nodes; the aerial shoots have quick spreading stolons with erect growth. It has also got underground stolons which make it to perennate effectively under adverse soil conditions. It produces large quantity of leafy material which is relished by livestock. Once it is established, it continues to grow for more than ten years

Climate

Paragrass is suited to warm, humid climate in tropical and sub tropical area. Being a tropical grass, it cannot tolerate the cold winter of north India and it goes dormant for nearly three months during the winter. It can tolerate considerable amount of water logging and can thrive well on damp, low lying areas. It prefers excessive moisture and comes up well in situations where there is difficulty for drainage. Under garden cultivation, it can be grown in a manner similar to Guinea or Napier grass. Under sewage conditions, the grass is ideally suited.

Soil and Land Preparation

For best results of growth, the paragrass requires loam to clay loam type of soil. It also grows well in loamy and heavy soils. With facilities of irrigation and manuring even in sandy soils it responds well. A saline and alkaline soil with pH 8-9 is adequate for its growth. This grass helps to reclaim alkaline soil to a great extent. For preparing seed bed, two to three ploughings are sufficient. First ploughing should be given by soil turning plough while subsequent by soil stirring plough. After first ploughing 75 to 100 cartload of farmyard manure are uniformly spread over one hectare of land and mixed with subsequent ploughings. The row-spacing for the paragrass has been suggested to be 60 x 60 cm and 50 x 60 centimetre

Varieties

Para (grown all over)

Seed and Sowing

Para grass can be sown by seed at 1-2 kg/ha. Sowing Para grass by seed has generally not been successful so Paragrass is propagated vegetatively. For sowing one hectare of land 27,780 kg vegetative material is needed. The roots and stem sets are used for planting. In selecting these sets, care is taken to make sure that each set has two to three nodes. About 10 quintals of stem set are required for one hectare land. The stem cuttings are planted in lines 50 cm apart (row to row) at a distance of 15 cm (plant to plant). It can also be established by broadcasting stem cuttings at the rate of 920 quintals per hectare and harrowing them, but subsequent weeding becomes difficult. In the northern parts of India the best sowing time is from March to August while for the southern parts of India, the best sowing time is from February to November.

Cuttings

Establishment has been mostly with cuttings, containing two to three nodes, with at least one node being buried. Para grass requires protection from excessive weed competition. A well-prepared seedbed is therefore an advantage. Cuttings are generally planted in mud or shallow water (up to 15 cm). Planting occurs in January and February, depending on rainfall. Cuttings should be planted on a square grid at 2-4 m intervals.

Manures & Fertilizers

Paragrass is highly responsive to cattle shed washings or sewage irrigation. Alternatively 30 to 40 tonnes of farmyard manure or compost should be applied at the time of land preparation with 30 kg phosphorus and 30 kg potash per hectare as basal application. Besides this 40 kg inorganic nitrogen per hectare should be top dressed after every harvest. Para grass is very responsive to nitrogen (N) fertilizers. An application of N in the first season is useful to improve establishment and help young plants to overcome weed competition. N fertilizer gives increased yields. The application of phosphate fertilizers by themselves has not been shown to increase dry matter content of Paragrass.

Irrigation

Establishment of the crop may require two to three light irrigations depending upon humidity and temperature. The soil should be kept always moist. It is a water loving grass and requires frequent and

heavy irrigations. Irrigating with sewage water or cattle shed water benefits more. In summer, irrigation should be given every ten to fifteen days. Soon after the monsoon or irrigating field, the field should be drained properly for aeration better decomposition of organic matter in the soil.

Weeding

Paragrass is a sturdy and aggressive grass. The land should be kept weed free for the first two months. The grass planted in lines may be easily intercultured once or twice.

Cultivation

Paragrass can be grown near water logged areas. It is generally, established from mature stem cuttings or root runners. Once established, it continues to grow for over ten years. Under irrigated condition, this grass can be planted any time, but under rainfed condition, planting should be done with the onset of monsoon. It is essential to keep the ground moist during dry months to keep the grass green all the year round. Generally, it is free from pests and diseases. Paragrass is best grazed on a rotational basis. It can be cultivated along with other grasses as mixture for supplying green fodder all the year round under assured irrigated condition.

Crop cycle

para grass + rice bean,
paragrass + centro,
paragrass + cowpea,
paragrass + berseem,
paragrass + lucerne and
paragrass + velvet bean.

Harvesting and Yield

The crop becomes ready for the first cutting in about three months after planting when the grass attains a height of about 60 to 75 centimeters. Subsequent cuts are taken at an interval of 4 to 6 weeks depending upon the soil, climate, moisture regime and manuring. In north India, grass grows vigorously from June to October and provides 4 to 5 cuttings but the humid and mild climate of south India allows about 10 cuttings. The stems become coarse if harvesting or grazing is not done early. The yield per cuttings ranges from 15 to 25 tonnes per hectare. The average annual yield in north India is about 75 tonnes per hectare while it ranges from 120 to 150 tonnes per hectare in south.

Grazing

As Para grass is very palatable, grazing of new plantings should be delayed until the cuttings are well rooted and well developed. It is desirable not to graze the pasture in the first year because early grazing results in the pulling out and destruction of cuttings. It generally takes 12 months for a stand to develop properly. Para grass is normally used during the dry season as saved fodder. Allowing animals onto ground which is too wet can damage the stand through pugging. Para grass should be regarded as a browse grass. Grazing should be controlled to prevent excessive damage to runners. With light stocking, animals eat only the leaves. With heavy stocking, stems are destroyed to the crown or roots, which results in a very slow recovery. Para grass can withstand heavy grazing while the soil moisture

is high and the plants are actively growing. Under normal conditions it will not stand continuous grazing. A stocking rate of one animal/1.5-2 ha is recommended as a safe stocking rate for Para grass.

Uses and Importance

Paragrass is used for soil conservation and reclamation of saline and -alkaline soils, swamps, seepage, newly cleared areas as low land. It also works as cover crops to prevent soil erosion. Paragrass can be also used as a fodder. This grass remains tender and succulent which is palatable, nutritious and can be fed without chaffing. This can be mixed with feeds molasses and mineral mixture. It is a good fodder grass, for feeding green or as hay and also makes a good turf. The hay yield is about 50 quintals per hectare and being soft, it is relished well by cattle. It is said to improve milk flow in cows and buffaloes. It is used for green silage, hay making and should be grazed rotationally as it will not withstand heavy grazing.

Conclusion

Global trend in animal production indicates a rapid and massive increase in the consumption of livestock food, that can be fulfill by growing the wide species of fodder grasses in different geographical area of the country. It can be used for conservation of soil as well as other natural resources. Under favorable conditions, Paragrass can form pure stands, replacing native wetland plants and interfering with aquatic ecosystems. This grass could be good source for fodder production in different part of India to reduce the disparity among the different grasses and will be helpful in upliftment of living status of farmers in the country like India.

References

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