

BERSEEM

(Trifolium alexandrinum)

Berseem (*Trifolium alexandrinum*) is an annual leguminous fodder crop. It is one of the most suitable fodder crops for areas below 1700 m altitude with irrigation facilities. It remains soft and succulent at all stages of growth. It can be grown without irrigation in areas with high water table and under water-logged conditions. Berseem gives a highly nutritious and palatable fodder in repeated cuttings from November to mid-June. It is widely grown both for fodder and green manure.

Origin: Egypt

Climatic Requirements : Berseem needs mild temperature for germination and establishment. Its growth is restricted during intensely cold or frosty weather. Temperature = 25 to 30° C for germination, 35 to 37° C for flowering.

Soil Type : It grows well on medium to heavy soils and withstands alkalinity.

Preparatory Tillage : A good crop is raised on land which had been properly levelled and is free from weeds. Prepare a good seedbed with 2-3 ploughings, each followed by a planking.

Time of Sowing : The last week of September to first week of October is the best time of sowing.

Seed rate

- 20-25 kg/ha is needed for sowing
- Spacing = 25 cm apart by drilling and then planked

Improved varieties: Pusa giant, IGFR-S-99-1, UPB-101,103,104 & 105

Nutrient management:

- Organic manures – 15 to 20 tonnes/ha
- 20 – 40 – 0 Kg NPK/ha & molybdenum – 1 kg/ha

Irrigation : The first irrigation is important and should be applied early to get a good crop stand. The first irrigation may be given within 3-5 days in light soils and 6-8 days in heavy soils after sowing. Afterwards it may be applied within 8-10 days during summer and 10-15 days during winter depending upon soil type and weather.

Harvesting : First cutting is ready in about 50 days after sowing and subsequent cuttings at 40 days intervals during winter and 30 days intervals in spring, thus giving 6-8 cuttings in all and producing about 50-100 t green fodder.

Yield: The first cutting is obtained usually 60 days after sowing and subsequent cutting at the interval of 25 to 30 days. In the mid-hill zone during winter, interval between cutting is about 50 to 60 days. In all, 5 to 6 cuttings may be obtained. On an average, nearly 550 quintals of green fodder per hectare may be obtained.

- Green fodder - 60 to 80 t/ha/year
- Seed yield – 300 to 500 kg/ha

LUCERNE/ALFALFA

(*Medicago sativa*)

Family: Leguminaceae

Origin: South West Asia

Climate: Optimum temperature required is 20-22°C. It does well on irrigated soil of arid and semi-arid tract.

Soil Type : Well-drained loamy soils are the best for this crop. It cannot withstand alkaline and waterlogged conditions. It is very susceptible to acidic soil, therefore, it cannot be grown in soil with pH below 6.5 unless lime is applied.

Inoculation : The inoculation of lucerne with the specific Rhizobium culture (*Rhizobium meliloti*) will increase the forage yield as well as improve the fodder quality.

Varieties: Sirsa-9 (Type-9), Anand-3

Weed Control : To the planted crop, give the first hoeing about one month after sowing and the second after the rainy season.

Sowing time: Best time of sowing is the first fortnight of October to end of November.

Seed rate: 20 kg /ha of cuscuta free seeds

Spacing: Rows should be 25cm apart

Fertilizer: NPK @ 25-120-40 kg/ha

Irrigation : Give the first irrigation about a month after sowing and the subsequent irrigations after 15-30 days, depending upon the weather. During the rainy season, do not allow water to stagnate in the crop.

Harvesting : The planted crop takes about 75 days to become ready for the first cutting. The subsequent cuttings may be taken at an interval of 30-40 days.

Yield: The newly grown crop is usually ready for first cutting in about 2-4 months after the seeding. The subsequent cuttings may be taken at intervals of 30 to 40 days. It may give, on an average, 350 quintals green fodder per hectare per year.

OATS

(*Avena sativa*)

Family: Poaceae

Origin: Asia minor

Climatic Requirements : Oats make best growth in cool and moist weather. High temperature at blossoming increases the proportion of empty spikelets and reduces the seed yield.

Soil Type : Oats can be grown on all types of soils, except the alkaline or water logged soils.

Preparatory Tillage : Plough the land three times to make it free from weeds.

Time of Sowing : The optimum time of sowing is from second week to last week of October.

Varieties: Kent, Craig, HFO 114 (HFO 114 is used both for fodder and grain purpose).

Irrigation : Three to four irrigations including the pre-sowing irrigation are sufficient.

Harvesting : The harvesting of single cut oats should be done from boot to milk stage. In multicut oats take first cut at 65-70 days after sowing and second cut at boot to milk stage.

Seed rate: 80-90 kg/ha (for small seeded) and 100-120 kg/ha (for bold seeded)

Spacing: Rows should be 20-25 cm apart.

Manuring: For multiple cutting, basal dressing of 40 kg N and 40 kg P₂O₅ should be done at the time of seeding and 30 kg N should be applied as top dressing each after first and second cutting.

Cuttings: For single cut plots, optimum time of harvesting is the fifty per cent bloom stage. For multiple cuttings, the first cutting is taken about three months after seeding and subsequent cutting at an interval of 40 days.