

Fodder Management

Fodder Production



Introduction

- 1 acre can support fodder for 4-5 cows
- Land usage for Fodder
 - Devote ½ for legumes like cluster beans, lucerne, ground nut etc.
 - Devote ½ for grasses like maize, sweet sudan grass, oats, barley, hybrid napier etc.
 - At the end, because grasses are tall you will get 30% legumes & 70% grasses
- A variety of Fodder needs to be grown and made available all year round. In winter all types of fodder can be grown.
 - Should include pulses/ legumes, millets/grasses, oil seeds etc.
- Excess Fodder should be grown during monsoon for making silage & during winter for making hay

Land Preparation Tips

- If lots of weeds, disc harrow the land twice (second time perpendicular to the first)
 - Let the weeds decompose for a few days
- Cultivate the land with cultivator twice (second time perpendicular to the first)
- Make ridges every 10 feet along the slope
 - Slope should be 1 degree for every 50 feet
- Do line sowing along the slope immediately after cultivation
 - Delaying the sowing will result in loss of moisture & poor germination
 - In case of unanticipated delay, cultivate with plank
 - Use a seeder to do the line sowing
- Cover the seeds by cultivating with a plank.

Seed Sowing Tips

- Mix 2-3 kgs. xxx of CPP with the seeds per acre
- For broadcast
 - Divide the area into smaller sections. Each section only wide enough for seed spread by hand
 - Divide the seeds also into the same number of pile and ear mark one pile to one section
 - Broadcast each pile of seeds into its ear marked section to get uniform sowing of the seeds

Spreading Compost

- Get the recommended quantity/acre of Compost
- Divide the area under consideration into xxx feet sections
- If there are 10 such sections, Divide the Compost into 10 equal parts
- Spread each part in its designated section
- This achieves even application of the compost
- Note: Same applies for seed broadcast also

Fertilizing Tips

- Nitrogen fixing types of fodder like Lucerne, Cow Pea etc. need only Compost
- Grasses like African Tall, SSG, Hybrid Napier etc. need Composts enriched with cakes or bonemeal
 - To 1000 kgs. Of Compost, add 50 kgs. Of powdered Neem oil cake
 - If cake is not in powdered form, sprinkle water, leave for an hour and then break it before mixing with compost
 - A variety of cakes like Pongemia, Castor, Sunflower, Mustard etc.) can be used
 - This mixture can be used after a period of 1 month
- Another way of applying cakes is in liquid mixture form
 - Add 8 kgs. Of cake (Pongemia) in 200 liters of water
 - Stir twice daily for 3-4 days
 - Drench the plant roots directly
 - Above can be used for xxx acres

Weeding Tips

- 40% cost of a crop is for weeding.
- Weeding at the right stage is important. Otherwise cost goes up steeply
 - Weed out at 2 to 4 leaf stage by hoeing
 - 10 feet beds - 3 ladies; 8 feet beds – 2 ladies with weeding sickle
- For multi-cut, weed within 2-3 days of the cutting & before applying the compost

Irrigating Tips

- XXX

Lucerne

- Also popularly known by Arabic name Alfalfa which means fresh fodder
 - is considered the Queen of fodder
- Perennial – 3 years & more if well taken care of
 - Grows to 2 feet normally but with Biodynamics up to 3 feet without lodging
- Is rich in nutrients esp. Phosphorous
- Has high Protein content (25%)
- Excellent feed for pregnant cows
 - Dry Lucerne is best for weaning calves
- Does not do well in heavy rains
 - Consider growing on raised beds
- The flowers attract lots of bees and lady bug beetles
 - The best honey is produced when bees feed on Lucerne

Lucerne (Contd.)

- Land Preparation
 - Water & get weeds out
 - Spread per acre 10 Tons Compost + 100 kg. bone meal or Rock Phosphate + 50 kg. Neem cake
- Sowing Time
 - By 15th October
 - After night(XXX???) temperatures fall below 20 degrees centigrade
- Seed Rate
 - 10 kg./acre
 - Increase by 1.5 times for clay soils
- Spacing
 - Always do line sowing in 8 feet beds or raised beds
 - Row to Row 6"
 - Plant to Plant 1" – Dribble
- Harvesting
 - First cutting after 50 to 55 days
 - Never cut before this otherwise nodulation will be poor
 - Second & subsequent after 25 to 30 days in winter (2 to 2.5 feet tall)
 - In summer 20 to 22 days
 - Best, most nutritious harvest when 20% flowering
 - Cutting & weeding very important for proper growth
 - Yields 2 to 4 Tons/acre
 - 1st cut yields only 1 Ton/acre
- Weeding
 - After every cutting, weed within 2-3 days
- Fertilization
 - Spread simple Compost at the rate of 1 Ton/acre every 2 to 3 cuttings

Maize (Also called Corn)

- The African Tall is a good single cut variety of Fodder that can be grown all year round
 - Gives good biomass per acreage
 - Grows 12-14 feet tall, has broad leaves & hence more protein
- Excellent for making silage because of high lactic acid content
- Rotate bed with Cowpea or other legume
- Land Preparation XXX
 - Spread per acre, 4 Ton compost mixed with 100 kg. Neem cake & 50 kg. Bonemeal
 - Disc Harrow, Cultivate & make 10 feet flood irrigation beds with gentle slope (1 inch every 10 feet XXX)
- Subsequent Fertilization XXX
 - Apply Cake/Bonemeal enriched compost

Maize (Also called Corn)

- XXX/acre at knee high stage
 - XXX,/acre 6 days before tassle stage
 - In case of yellowing, (esp. during heavy rains/flooding) give extra dose at rate of xxx/acre
 - Soil bunding xxx very important when crop is knee high
- **Seed Rate**
 - 25 kg./acre
 - 20% more for broadcasting XXX Double???
 - **Spacing**
 - Does best with line sowing & from weed management point of view
 - Plant to Plant 12 inches
 - Row to Row 3" - Dribble

Maize (Contd.)

- Harvesting
 - 75-85 days (Milk stage) for drying or as green fodder (Winter xxx days)
 - Should be harvested fully between early milk stage to late milk stage i.e. 10 to 12 days
 - 90 days (Dough stage) for silage (Winter xxx days)
 - Yields 20 Tons/acre
- Also can be broadcast as a mixture with legumes like cow pea etc.
 - Per acre 25-30 kg. of mix required for optimal production
 - Suppresses weeds
 - The legumes will do well – climb over each other
 - What don't do well will die & become mulch
 - No need for crop rotation. Just change the ratio of legume to corn the next time
- Feed lactating cows only after chaffing to 1" pieces
 - Otherwise they waste energy

Sweet Sudan Grass (Also called SSG or Sorghum Grass)

- This is an excellent multi-cut fodder that can grow 10-12 feet tall & which can be grown all year round
 - Will not do well in monsoon, so start sowing only when the rains start receding
- Land Preparation
 - Spread per acre, 4 Ton compost mixed with 100 kg. Neem cake & 50 kg. Bonemeal
 - Disc Harrow, Cultivate & make 10 feet flood irrigation beds with gentle slope (1 inch every 10 feet XXX)
- Seed Rate
 - 15-16 kg./acre for line sowing
- Spacing
 - Row to Row 12 inches
 - Plant to Plant 1" - Dribble
- Harvesting
 - 3 to 4 cuts

Sweet Sudan Grass (Also called SSG or Sorghum Grass)

- 1st after 75 Days
- 2nd after 60 Days
- Subsequent 60 Days or when 10-20% heading
- Complete harvest when heading is 20-40%
- If 100% heading, protein levels are low & not that palatable.
 - Cows will eat less & lots of wastage, which means you have to give more grains/concentrate
 - Total heading takes place in 10 days XXX
- Yields per acre 15 Tons first cut & 12 Tons subsequent cuts
- Fertilization
 - After each cut add per acre 2 Ton Compost+50 kg. cake
- Local variety has HCN 200 parts/million. Use the variety SSG-998

Rajko Bajra

- This is a multi-cut variety
 - Up to 3 cuts
- Stems are thin & hence more proteinXXX???
- Seed Rate
 - 6 to 8 kg/acre
- Spacing
 - Row to Row 12 inches
 - Plant to Plant 1 inch - Dribble
- Harvesting
 - As soon as it heads
 - 1st cut 45 to 50 days
 - Subsequent every 50 to 55 days
 - Yields per acre 12 Tons for 1st cut
 - Yields per acre 10 Tons for subsequent cuts

Cow Pea

- Grow all year round
- Helps with problems of retain placenta
 - Give 5 kg. to the cow immediately after she delivers
- Seed rate
 - 12 to 15 kg./acre
- Spacing
 - Row to row 12 inches
 - Plant to plant 3 inches
- Harvesting
 - Start cutting in 50 days & finish before flowering i.e. 10 to 15 days
 - Yields 8 to 10 Tons/acre

Cluster Beans (Guar)

- Good fodder for bullocks
- Mainly grown in summer & monsoon
- Seed rate
 - 12 to 15 kg./acre
- Spacing
 - Row to row 12 inches
 - Plant to plant 3 inches
- Harvesting
 - Grows to 4 feet in 60 days
 - Start harvesting from 60 days & finish in 75 days
 - Yields 10 to 12 Tons/acre

Fodder Beet

- Swedish variety
- Seed rate
 - 400 gms./acre
 - Raise seedlings in nursery & transplant after 21 XXX days
- Spacing
 - Row to row 1.5 feet
 - Plant to plant 9 inches
- Harvest
 - Leaves can be harvested after 60 days
 - Beet & Leaves can be harvested after 4-5 months
 - Yields 40 Ton/acre
- Feeding
 - cut into 4 pieces
 - Cows love to munch on it
 - Very rich in iron

Sunflower

- Sowing Time
 - October to January
- Seed rate
 - 5-20 kg./acre for line sowing
 - For broadcast , use 20% more seed
- Spacing
 - Row to Row 12 inches
 - Plant to Plant 3 inches - Dribble
- Harvesting
 - Start harvest at 10% flowering & finish within 50% flowering
 - 50 to 75 days
 - Yields 14-15 tons/acre
- Feed by cutting into 1 inch pieces after passing through the chaff cutter

Oats

- Very high quality of milk when cows are fed oats
 - Even better than Lucerne
- Seed rate
 - 35 kg/acre for line sowing
 - 30% more for broadcast
- Sowing time
 - Sow after 15th Nov. in Gujarat
 - Night time temp. below XXX
- Spacing
 - Row to Row spacing can be 8 to 12 inches
 - Plant to Plant spacing 3 inches – Dribble
- Harvesting
 - 1st cut after 50 to 55 days when crop is 1 to 1.5 feet tall
 - Next cut at 75 days when crop is 4 feet tall XXX
 - Yields 15 Tons/acre
 - Don't cut at all for seeds

Barley

- Similar to Oats
 - But sowing can be started 15 days earlier
 - Also second cut is not that great
- Seed rate
 - 35 kg/acre for line sowing
 - 30% more for broadcast
- Sowing time
 - Sow after 1st Nov. in Gujarat
 - Night time temp. below XXX
- Spacing
 - Row to Row spacing can be 8 to 12 inches
 - Plant to Plant spacing 3 inches – Dribble
- Harvesting
 - 1st cut after 50 to 55 days when crop is 1 to 1.5 feet tall
 - Next cut at 75 days when crop is 4 feet tall XXX
 - Yields 15 Tons/acre
 - Don't cut at all for seeds

Hybrid Napier

- Perennial – 3 years
 - After 3 years, uproot/de-clump & replant
- Improved varieties CO2, CO3, CO4 etc.
- Grow at 3feet x 3feet spacing & along bunds etc.
- Limit to 10-15% of land devoted for fodder
- Cannot give as main feed
 - because of low protein content (<8-10%)
 - Also has Calcium Oxalate which is not good for the animals when fed excess
- Fertilization
 - Per acre 10 Tons of Compost+100 kg. bone meal + 100 kg. Neem cake
- Harvesting
 - Cut before flowering
 - First after 75 days
 - Subsequent every 45 days
 - Yields 5 kg./plant for every cut after it has reached 4 feet
- Sprinkle Cake/Bonemeal enriched Compost after cutting, & weeding at the rate of xxx/acre

Other Perennial Fodder Grasses

- Cenchrus
- Panicum
- Marvel
- All are drought resistant

MP Chari

- Not recommended
 - If fed before heading, it can be dangerous
 - Has high HCN content before that