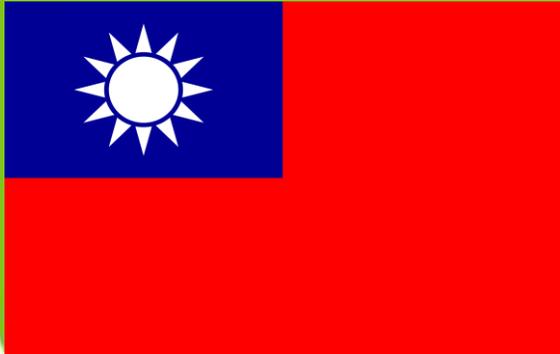


TAIWAN



# Breeding Sheep and Goat Production and Guidance System Enhancement Project



## **Pasture Establishment**

Livestock Section, Central  
Farm, Cayo District

# INTRODUCTION

- ✓ Pastures must be well established to be highly productive. Before establishing new pastures or renovating existing pastures, producers must evaluate the farm's forage needs i.e. Feed Lot, Hay or Grazing.
- ✓ “ Debemos ser agricultores antes que ganaderos”

# GENERAL CONSIDERATIONS

- ✓ It is important to consider whether the forage will be used for grazing, feed lot or hay
- ✓ What forage species are best suited for the area
- ✓ What resources are available in terms of equipment, money, and time

# BEFORE ESTABLISHING A PASTURE

## SITE SELECTION

- **Topography of the land:** Low lying areas (prone to flooding – disease risks) vrs. Inclined areas (burning energy by sheep)



- **Soil Structure:** The air or pore space, rock size, in the soil (water retention capacity). Important for root development.

- **Soil Texture:** What the soil is made up of (Macro and Micro Elements), Clay, Loamy, Sandy, Calcareous soils.

# BEFORE ESTABLISHING A PASTURE

- ✓ Conduct soil testing and correct soil nutrient deficiencies
- ✓ Selecting pasture variety adapted to the specific area
- ✓ Implementing the correct seed planting method and rate.
- ✓ Implementing a weed control program



# SOIL FERTILITY

Planning for a successful pasture establishment or renovation should start 6-12 months in advance. If possible adjust soil fertility before seeding. With the high cost of fertilizers now it is better to eliminate the guessing game and obtain an accurate soil sample.

# LAND PREPARATION

Good seed to soil contact is essential to maintain adequate moisture near the seeds. This moisture is necessary for germination and secondary root growth. Land preparation is highly dependent on the type of machinery that is available/affordable or whether it's a new pasture or renovation.



# **PLOUGHING**

After the land has been cleared this is the first step to a successful land preparation. A depth of 8-12 inches of tillage is sufficient for this process but needs to be done properly. Poor ploughing often leads to poor harrowing and poor germination of grasses.

# HARROWING

This usually takes place three days after ploughing depend on soil moisture. This is done 2-4 times before seeding to ensure firmness and elimination of clumps from the soil. This also allows for the removal of weeds before planting.



# **NO PLOUGHING LAND PREPARATION**

No-ploughing involves the use of herbicides or burning to kill existing vegetation and then seeding directly into the residue. This method reduces soil erosion and conserve moisture but slows down germination

# GRASS SELECTION

- ✓ Selecting the right grass to plant is extremely important. In order to do this you must first match grass to site, soil type and type of operation (Grazing, Hay etc).
- ✓ For legumes make sure the specie is compatible with the grass specie to minimize species competition.
- ✓ Also consider drainage and water retention capacity of the soil.



# PLANTING METHODS

The ideal seeding method depends on the type of equipment available and whether you plant on a non till or a ploughed/harrowed soil. Different seeding methods are available to ensure good soil to seed contact, seed germination and timely emergence.

# BROADCASTING

- ✓ This method uses a fertilizer spreader and usually results in uneven distribution of seeds especially if the overlap is too wide.
- ✓ Make sure the spreader is calibrated for the appropriate seeding rate
- ✓ When broadcasting increase recommended seeding rates by 20%

# BROADCASTING



# DRILLING / DIRECT SOWING

- ✓ Cut a thin furrow in the soil, deposit the seeds then cover.
- ✓ Plant seeds at a minimum of 1 inch in depth



# TYPES OF WEED CONTROL

- ✓ Mechanical – Use of machinery
- ✓ Chemical – Use of chemicals
- ✓ Natural – Use of other plants

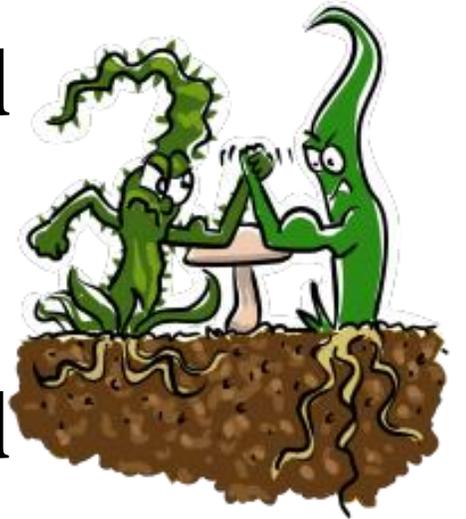




# WEED CONTROL

A weed management plan will help ensure success in forage establishment. It is important to control weeds during establishment because newly emerged forage seedlings are extremely susceptible to weed competition.

Weeds compete for water, nutrients and sunlight.



# **WEED CONTROL CONT'D**

Broadleaf weed control is requires multiple application throughout the year.

Applications at different time of the year will better control weeds that germinate during different seasons.

# PASTURE MANAGEMENT

- ✓ Do not allow animals to graze new stands too early or too frequently. Allow plants to become well established before heavy grazing. Mow or lightly graze pastures when plants are 8-12 inches tall.
- ✓ Ideally, do not introduce sheep to newly planted pastures but wait for the pasture to produce seeds, then bush-hog so that new seeds are planted indirectly. This will help colonize pastures.
- ✓ Most forage crops should not be grazed shorter than 3 to 4 inches.

# PASTURE MANAGEMENT

- ✓ Maintaining proper grazing height will help trigger new plants to produce runners.
- ✓ A rotational grazing approach could be beneficial in ensuring successful establishment



# SUMMARY

- ✓ Proper forage establishment is a key step in having a thick, lush, profitable pasture.
- ✓ Take soil test to determine fertilizer requirements and take steps to control weed problems.
- ✓ Soil type, drainage, moisture holding capacity, fertility and pH all affect plant species selection.

# SUMMARY

- ✓ Consider using improved forage varieties that are adapted to your geographical area and plant at the appropriate time.
- ✓ You can decrease the risk of planting too deeply by preparing the soil properly and calibrating the drill to the correct rate and depth.
- ✓ A well planned management system will help ensure success for this costly venture.



# **SUPPLEMENTAL FEEDING**

**Protein bank**

# **DEFINITION**

A concentrated unit of forage legumes established and managed by farmers on or near their farms.

# FORAGE

Definition: Plant of leafy material eaten by livestock

Types include:

- ✓ Grass
- ✓ Silage
- ✓ Legume
- ✓ Hay
- ✓ Greens



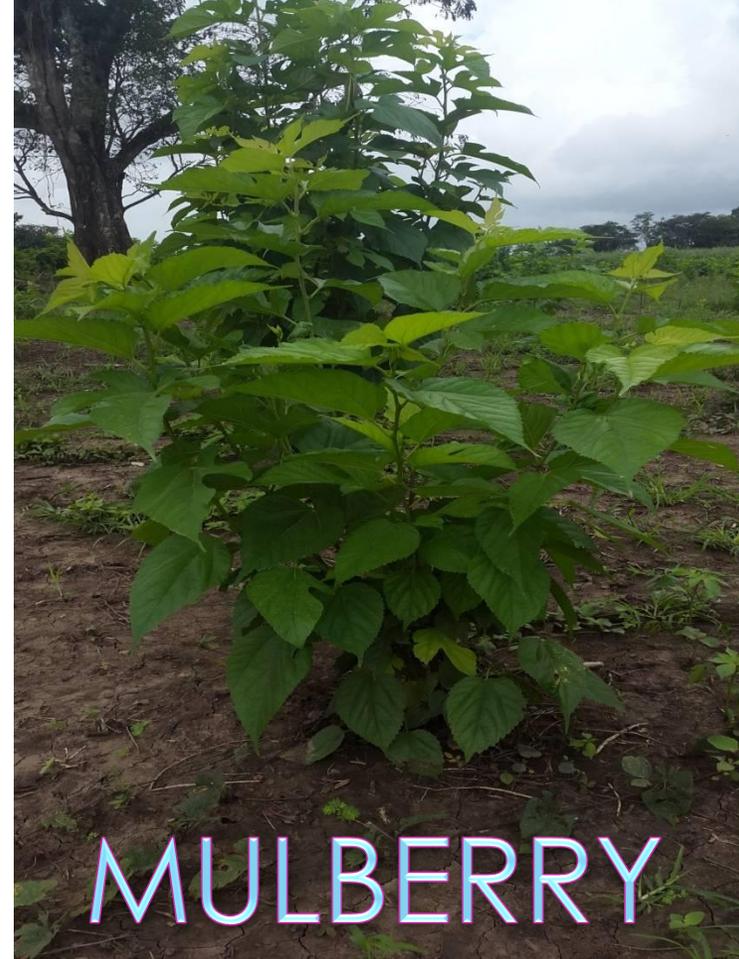
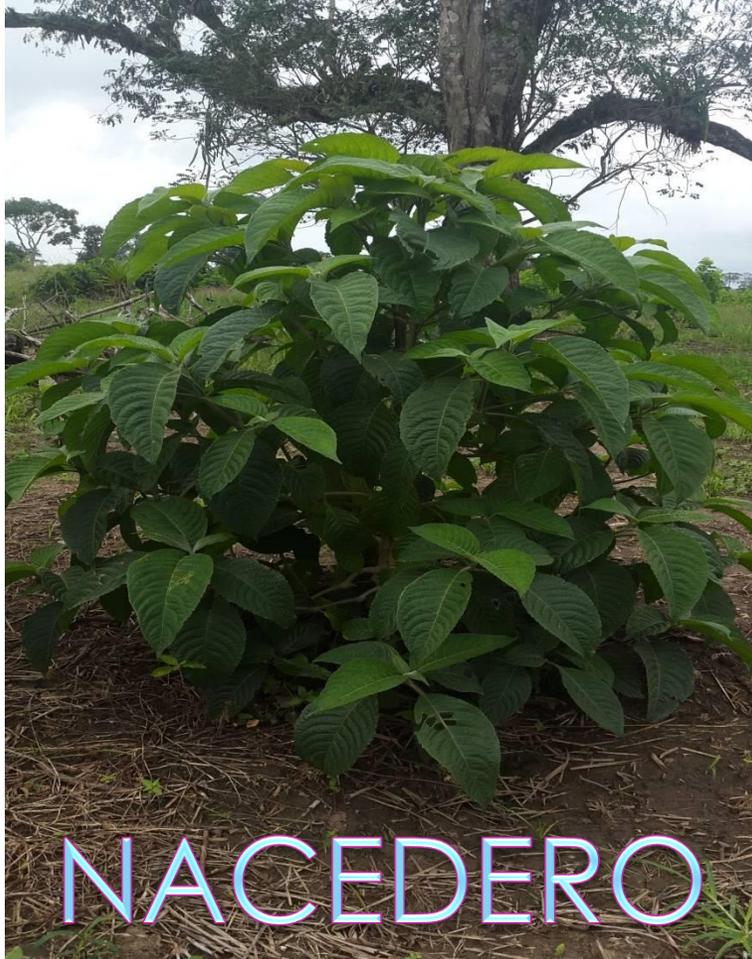
# FORAGE



# **TYPE OF FORAGE LEGUME**

- ✓ Mara Alfalfa
- ✓ Nacedero
- ✓ Mulberry
- ✓ Leucaena
- ✓ Taiwan Grass
- ✓ Sugar Cane
- ✓ Just to name a few

# TYPES OF FORAGE LEGUME



# PROTEIN BANKS

- ✓ A source of protein.
- ✓ Forage legumes contain a higher Crude Protein percentage than grasses.
- ✓ Helps provide much needed nutrient throughout the dry season.
- ✓ Requires small amount of land.

# HOW TO ESTABLISH A PROTEIN BANK

- ✓ Fence a block of the desired plot to be planted
- ✓ Prepare the land for planting
- ✓ Plant pre-selected legumes/forage
- ✓ Control competing weeds
- ✓ Defer cutting of grazing until bank is in optimum production

# SUPPLEMENTS

- ✓ Corn/Soybean concentrate has a high protein content: Recommended 1-1.5 lbs per head per day.
- ✓ Hay: Blue Stem, Star Grass, Mombasa, Aruana, etc.
- ✓ Maralfalfa Grass, mixed with Nacadero and Mulberry in a ratio of 60-20-20%.
- ✓ Others



Thank You