Grasses Overseeded with Legumes

There are many benefits from legumes in a pasture system. Presence of legumes in a pasture minimizes the use of N fertilization. It will also improve the seasonal distribution of forage DM (dry matter) by boosting dry season production as legumes can still grow even during the dry season when grasses remain dormant. It will also improve protein levels and overall digestibility of the forage.

Complete Renovation

This is the most expensive technique of pasture improvement as it would require the addition of soil amendments, i.e., lime, complete tillage, or cultivation, the use of weeds, and the use of weedicides to kill existing vegetation prior to land preparation, and seeding or planting. But this is the most beneficial in the long term.

Weed Control

Using this management technique would require knowing the following:

• Grazing management being practiced
• Soil fertility levels
• Most adaptable pasture species
• Selective removal of unwanted pasture species

Soil Drainage

Install drainage canals in water-logged pasture area to enhance soil aeration and for better pasture growth.

Pasture Establishment

Clearing, Brassing
- Land preparation—plowing, harrowing, furrowing (Mechanical/Animal drawn)
- Gathering and preparation of planting materials

Planting/Sowing

Weeding

Fertilizer Application

Removal of unwanted grasses/sedges/broad leaves

The ideal time of planting is at the start of the rainy season to take advantage of the moist condition of the soil and to obtain good germination and survival of the new plantings.

If irrigation is available, planting can be done anytime of the year.

Establish a Nursery as source of vegetative planting materials for grasses and legumes in establishing large pasture area and to avoid transporting in bulk.

Reference:
Lecture Handout prepared by Mr. M.M. Loresco
University Researcher and Head,
Dairy production and Technology Division, ADSC,
University of the Philippines Los Baños

Department of Agriculture
NATIONAL DAIRY AUTHORITY
NDA-Central Office
NDA Building, BAI Compound
Visayas Avenue, Diliman, Quezon City
Phone: 926-0733 to 35
Fax: 926-8847
Email: dairynda@pldtdsl.net
Website: nda.da.gov.ph
**Pastures** are the cheapest feed resource for ruminants. These are mainly dominated by native grasses like **cogon** (Imperata cylindrica), **talahib** (Saccharum spontaneum), **amoroseco** (Chrysopogon aciculatus), **misamis grass** (Capillidium parviflorum), and **bagokbok** (Themeda triandra).

Productivity of native grasses remain low. Studies showed that a hectare of cogon dominated vegetation can only support .03 animal unit per ha. One animal unit is equivalent to 1 native cattle and her calf; therefore one needs at least 3 hectares to provide the needed forage requirement of one animal unit.

Hence there is a need to establish improved pastures planted with high yielding forages is recommended. With good management, these will remain productive for many years to provide quality feed to sustain Dairy production.

Like any crops, pastures require inputs (i.e. Land preparation, weeding, fertilizers, irrigation, etc.) to become productive. One should know the required management inputs to sustain productivity of established pastures. Pastures play an important role in ensuring the profitability of the dairy enterprise.

**Improved forages adapted in the Philippines are:**

**Grasses:**
Napier, guinea, Paragrass, Stargrass, Alabang X, Signal grass, Mulatto II and Mombasa.

**Legumes:**

These have a higher herbage yield and of better quality.

**Why the need to have an improved PASTURE?**
- To increase pasture yield
- To increase milk production or decrease supplemental feed through better forage quality
- To enhance the seasonal distribution of dry matter so that cows’ nutritional needs are met throughout the season.

**Establishing an Improved Forage and Pasture**

**Soil Testing**
This will show the pH level of the soil as well as provide levels of nitrogen (N), phosphorous (P), and potassium (K), and other elements e.g. Ca, Mg, Fe, Zn, Mn etc. as necessary.

**Liming**
The application of lime is needed to raise the soil pH. Nutrients become readily available and plants grow best at pH 6 to 7. Soil microbes needed to release nutrients from organic matter also thrive best under this pH range.

**P and K Fertilization**
Apply P and K if soil tests show there is a need. They help maintain legumes in the stand. When P and K levels are low, grasses which are more efficient at extracting them from the soil will dominate the mix. However, in established pastures they generally need little supplemental P and K.

**N Fertilization**
Grasses need nitrogen since N stimulates leaf and shoot growth and boosts crude protein levels. However, N is a short term management tool. There are 3 factors to consider when to use N:
- Adequate moisture for grass growth
- Percent legume in the pasture
- Dominant grass specie in the pasture

**P - Phosphorus**
**K - Potassium**
**N - Nitrogen**