

## Challenges for making good silage

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- Good management reduces losses in the field (it could be 30% for grass/legume)
- Good management reduces losses of storage/preservation (it could be 30%)
- Good management means more milk produced for silage tons
- Harvest at correct crop stage

### 1. Forage quality declines

1. Forage quality declines with advancing maturity in grasses and legumes
2. Kernels of corn become hard and unavailable to cow

### • Optimum dry matter content for good silage making

1. If it is too high → drains, ferments, a small consume of animals
2. If it is too low → moulds, poor solubility

### • Minimize losses in the field

### • Minimize oxygen in the silo

3. Chop short (75% less than 1 cm, 20% longer than 3 cm), kernels broken

- Good compression
- Bacterial Lactic Acid for use of sugar
- Some long pieces for chewing

### 4. Fill/wrap rapidly

- Silage should not be exposed to air more than 4 days

### 5. Pack well

- Bunker 4 to 5 minutes per ton with 5800 kg tractor in 2 cm layers
- Pack bunker in flat sections or pack bunker in progressive wedges
- Minimize heating

### 6. Close them to keep air-locked

- Management practices to minimize losses in silage. Keep it cover in line, do not keep it close to other silages.

**Harvest: in appropriate and optimal conditions for fodder plants to take more milk quantity from the cow.**

### Time of grass harvest



*Harvest in emergency 1,330 liters milk*

L milk from one ton mowed fodders\*:

The mow should take place when the formation of small kernels starts, before they start growing.



*Delayed harvest: less milk 625 lit*

### Alfalfa Mow

Liters milk from 1 ton alfalfa\*:



*Harvest in emergency – 1450 kg*

Mow the alfalfa when gems come out, but still the flower has not been created.

Milk production from fodder silage to cows when cows' health and condition is bad, it has progressed 6 first months of lactation.



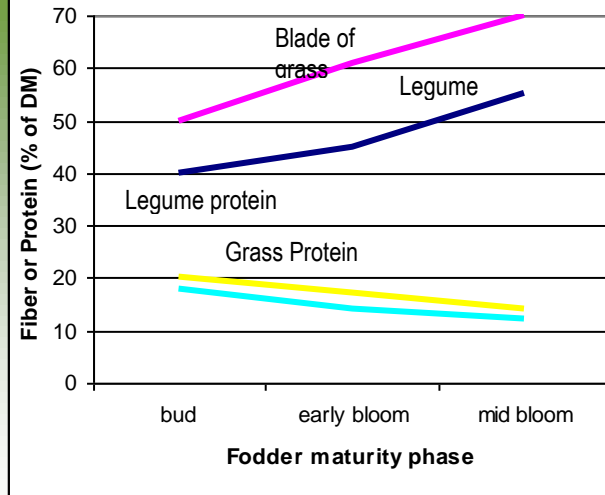
*Delayed harvest will little milk 900 liters*

### **Production of qualitative fodder silage**

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- 1) The aim is that fodder silage to have as much energy and proteins as it is possible.
- 2) The decrease of energy and proteins in grass and legumes as maturity increases.
- 3) Fiber growth in grasses and legumes is reached by **growth of maturity**. High fiber can reduce the consumption of both, forage and diet concentrate, and results in lower milk production.
- 4) Grass cut in the phase of development before blooming (head can hardly be seen) and legume in gems phase is optimist for the yield and quality of silage for productive cows.
- 5) Legumes have less fiber than grass, so there is a higher consumption.
- 6) Silage (grass, alfalfa, clover and maize) should be put in silos or bunkers with 65% moisture.
- 7) All silages should be packed carefully in silos or bunker to avoid oxygen.
- 8) Grasses and legumes need the increase of nutrients.

### **The effect of maturity phase in fiber and proteinic grass content**



- a. Both of them need almost the same amount of phosphorus (about 60 kg/ha yearly).
- b. Grasses need about 40 kg/ha Nitrogen for cutting.
- c. Legumes need about 25 kg/ha potassium per ton of produced hay. (**Moisture 12 to 15%**).
- 9) Phosphorus and potassium can be applied once a year (it is preferred after the first cut).
- 10) Nitrogen should be applied in grass after each cut.

Nutrients can be applied in the field, either as organic fertilizer, or as commercial one.



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## **PROCESS OF MAKING SILAGES FOR COW NUTRITION**

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