Forage particle size: why it is important for cows

- Cows are ruminants, that means they have 4 stomachs, they regurgitate food and re-chew it
- Cud chewing is necessary to reduce the size of forage particle because:
  1. It improves digestion of fiber in the rumen;
  2. It allows forage particles to escape the rumen and be digested in the lower digestive tract;
  3. Saliva produced during rumination maintains a healthy rumen and a healthy cow.
- Every day a cow spends:
  - 5-6 hours eating;
  - 8-10 ruminating.

American National Standard Institute

Forage Particle size Separator

IF FORAGE PARTICLE ARE TOO FINE

- Cows ruminate less and they develop stomach upset

IF FORAGE PARTICLE ARE TOO COARSE

- Cows easily select and eat mostly the grain resulting in stomach upset

Corn silage	**Particles >0.75**	**Particles 0.75-0.5**	**Particles 0.50-0.25**	**Particles 0.25-0.156**	**Particles 0.156-0.046**	**Particles <0.046**
It is a mixture of fiber and grain particles. *Its physical (as well chemical) properties affects cows performances*	Particles rich in fiber. *They stimulate prolonged cud chewing*	Particles rich in fiber. *They stimulate prolonged cud chewing*	Mixture of fiber particles *(less effective at stimulating chewing)* and whole kernels *(hardly digested)*	Mixture of fiber particles *(less effective stimulating chewing)* and broken kernels *(well digested)*	Mixture of fiber particles *(not effective stimulating chewing)* and finely ground kernels *(well digested)*	Particles have the least content of fiber *(not effective stimulating chewing)* and finely ground kernels *(well digested)*