

New feeding systems of polydispersed biomass

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Presently the feeding systems of polydispersed biomass are composed by a silo, which has at its bottom an endless screw or a transportation band.

Typically polydispersed biomass is characterised by the presence of matter linking between fibers, cohesive biomass powder and finally a broad granulometric distribution. These properties are the cause of archs or bridges occurrence formed inside the silo, specifically at its convergent section, which hinder the down movement of the stored material. This paper deals with an alternative feeding system, based on the study of the properties of polydispersed biomass, which is expected to allow a free flow of the biomass in the silo.

The proposed system is basically composed of a negative wall silo having removing and scratching devices as well as an endless screw and reductor.

In this new design, the final convergent section of the silo is suppressed. This paper presented some results obtained during the realization of the experiments with the new feeding system of polydispersed biomass.



Figure 1 New feeding systems of polydispersed biomass

Were employed in this experiments sugarcane and elephant grass. Was studied influence of the bellow an the feeding rate and the stability flow of the system.

- ? ? Biomass height into the silo;
- ? ? Type of biomass;
- ? ? Segregation of the material
- ? ? Speed screw conveyor.