GRAVIMETRIC FRACTIONING OF BIOMASS

In order to increase the quality in terms of reducing the contents of unwanted compounds from soil and minerals different fractioning method can be used. Contamination from soil is very common for example in stumps, for natural reasons since they are lifted from the ground. It is more or less impossible to avoid lifting gravel and soil particles together with stumps when they are harvested. Different handling steps from harvest to refining can be taken to reduce these contaminations (rocks and gravel). These steps include e.g. the splitting of stumps, their transportation, storing and handling. But still after all these stages ash contents are relatively high. At a terminal or in an industry site, advanced screening and fractioning method can be used to raise the quality of the biomass.

OPERATION PRINCIPLE

Gravimetric fractioning uses differences in specific particle weight in treated biomass. After it has been dried and comminuted to an appropriate particle size by chipping or shredding the biomass is fed into the gravimetric separator in an even flow. This is done by an air tight rotary valve or screw. The biomass is then transported in a thin layer by a vibrating table. An adjustable nozzle is placed at the end of the table and is lifting up lighter fractions by an air stream letting heavier fractions like rocks, gravel and metal pieces pass by. The equipment can also be used the other way round to reduce the amount of very light and unwanted fractions.

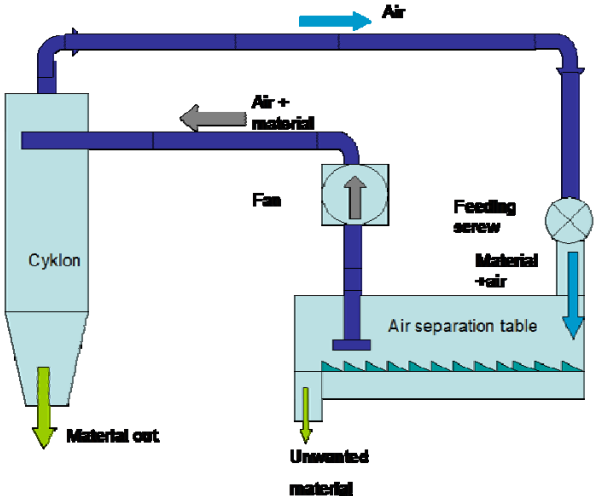

Fig 1. Principle set up of a gravimetric separator

Fig 2. Gravimetric separator for commercial use

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