

Straw, Hay, dried Plants, Herbal Teas

Using the Cutting Mill PULVERISETTE 15

Straw, hay, dried plants; herbal teas are mostly very bulky samples. The photo shows a typical straw sample. An average shopping bag contains 300 g straw or expressed like this: 100 g of uncomminuted straw take up the space of 1 to 2 litres. These materials are very voluminous.

For the comminution only a cutting mill with a high rotor speed can be considered. So the choice is between the Cutting Mill PULVERISETTE 15 and the Universal Cutting Mill PULVERISETTE 19.



Fig. 1: Ordinary sample of straw

The reasonably priced **Cutting Mill PULVERISETTE 15** is to be recommended if :

- ▲ Only a few samples per week are to be comminuted
- ▲ The sample amount is small
- ▲ The linear expansion has been reduced via chaffing for example
- ▲ If a low carry over of sample material to the next sample is tolerable
- ▲ More time for cleaning is available

Reasons for using the Cutting Mill PULVERISETTE 15

Are the recommendations in regards to cleaning and expenditure of time higher though, the Universal Cutting Mill PULVERISETTE 19 is implicitly to be recommended. Extremely positive effects on the cleaning have:

- ▲ Quick opening device for the housing
- ▲ Cutting rotor with V-cutting geometry only with smooth surfaces
- ▲ Cutting rotor removable without tools
- ▲ Sieve cassette removable without tools
- ▲ Standard and protected-funnels for long- and bulk solids without dead space

Faster sample feeding due to Cyclone

Larger sample amounts or also a larger number of samples demand a fast throughput of the sample. The limiting element with cutting mills is the addition of bulky samples. Here the recommendation can only be to combine the Universal Cutting Mill PULVERISETTE 19 with the Cyclone separator. The Cyclone separator generates an air current, which downright draws the bulky goods into the funnel (on the right side of the photo), draws it through the mill, thereby at the same time acts as a cooling current and finally separates the comminuted material into the sample bottle (pictured on the left side of the photo, connected to the black funnel). Everyone that is faced with this task and is familiar with the troubles of the comminution of straw is totally enthused after having once worked with this system.

Working with the Cyclone

Straw was comminuted with a **Universal Cutting Mill PULVERISETTE 19**, equipped with a 0.5 mm sieve cassette. During the first test, the sample was processed without the Cyclone separator, for the second test the Cyclone separator was used. When comparing both finenesses, the sample processed with the Cyclone separator contains slightly longer shares. In the air current generated by the Cyclone separator, longer parts are rather aligned and pushed through the sieve. With the Cyclone separator and a 0.25 mm sieve cassette, 1 kg dry straw was put through in 10 minutes. In order to understand this amount better, refer back to the volume of 1kg uncomminuted.



Fig 2: Straw after comminution

Applications for the Universal Cutting Mill

Additional uses for analogue applications for the Universal Cutting Mill PULVERISETTE 19 are the comminution

- ▲ of herbs and herbal teas for analytical tasks
- ▲ for drugs for the State Offices of Criminal Investigations, as a preparation for the qualitative and quantitative analysis
- ▲ of herbs as a precursor for the extraction



Fig 3: Universal Cutting Mill PULVERISETTE 19 with high-performance Cyclone separator

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