### Task:

**Application field:** Food

**Material:** Corn and straw

**Feed size:** 0-40 mm (after pre-cut of straw)

**Feed quantity:** 200 g (per corn sample)

**Material specification(s):** medium-hard, fibrous

**Customer requirement(s):** Applying of tests in cutting mill with bottom sieves 0.5 and 1.0 mm

**Subsequent analysis:** not defined

### Solution:

**Selected instrument(s):** SM 100 Cutting Mill

**Configuration(s):** Standard hopper; bottom sieves of stainless steel with Conidur holes of 0.5 / 1.0 mm; ring-type filter with Conidur hole body for collecting receptacle 5 l

**Parameter(s):** Revolution speed approx. 1500 min-1

**Time:** 5 min. (average per grinding test)

**Achieved result(s):** Different results; depending on the bottom sieve and the material properties

**Remark(s):** If corn is ground in cutting mills, it can be predicted that there will remain some sample residues in the grinding chamber which are depending on the applied bottom sieve. If 200 g of sample are fed into the mill, the following amounts will remain in the grinding chamber: 15 g with a bottom sieve of 1.0 mm; 25 g with a bottom sieve of 0.5 mm. Furthermore, a temperature increase due to frictional...
effects can be observed if corn is ground with a bottom sieve of 0.5 mm and which leads to moisture deposition in the grinding chamber. Further grinding tests in the Heavy Duty Cutting Mill SM 2000 were not applied because it is assumed that the grinding effects are similar.

**Recommendation:** We recommend our Cutting Mill SM 100 with restrictions for the grinding of medium-hard and fibrous corn and straw following the above mentioned conditions because the usage of bottom sieves < 1.0 mm leads to sample heating and moisture loss.