

Sequential Precision Divider SPD 4200

SPD 4200 Sample divider

The SPD 4200 sample divider (Figure 1) offers rapid and precise division of a range of small grain and kernels. The divider consists of five divider sections, and can be operated with all five sections, or fewer if required by the user. The division is made through gravity of the kernels where each section splits the sample into two halves. Using all five divider sections, a 3.125% sub-sample is provided in less than 15 seconds.



Figure 1: SPD 4200

Method Description

Pour in the sample in the top funnel, open the shutter to let the sample fall through the divider sections. When ready open the tray to remove the sample. The sub-sample is collected in the measuring cup in the tray.

Accuracy data

In Table 1, the accuracy data for different grains and kernels are displayed. The data are validated through dividing the samples in the SPD 4200 using five divider sections. Each sample was run five times on each instrument. Eight SPD4200 instruments were used in the study.

Table 1. Validation study results

Grain	Starting weight, validation test [g]	Theoretical weight (5 sections) [%]	Average weight (5 sections) [%]	Accuracy weight ¹⁾ [%]
Rice	300	3.125	3.1	0.2
Barley	300	3.125	3.1	0.2
Oats	300	3.125	3.1	0.2
Canola	300	3.125	3.0	0.1
Wheat	300	3.125	3.0	0.2

- 1) Accuracy is here defined as Standard Deviation (SD) from the combined repeatability and reproducibility data for the SPD 4200. SD indicates how precise the results can be expected to be with the divider. From the SD a result shall statistically fall within +/- 2x SD in 95% of the cases and within +/- 3x SD in 99% of the cases.

Immature and unsound kernels tend to be smaller in size and weight. Therefore, serial dividing cycles were performed to assure that neither small nor large kernels were favored in the division. The outcome of the test showed that no significant differences were shown. The results were based on the 1000-kernel weight of the bulk before and after division.