

# Perten Instruments - Shakematic 1095 Reproducibility Study

## Background

The Shakematic 1095 is an automatic sample mixer for Falling Number analysis. It mixes a sample in only 3 seconds mixing two sample tubes in parallel. A brief study was performed to demonstrate the reproducibility of the Falling Number test when a Shakematic is employed.

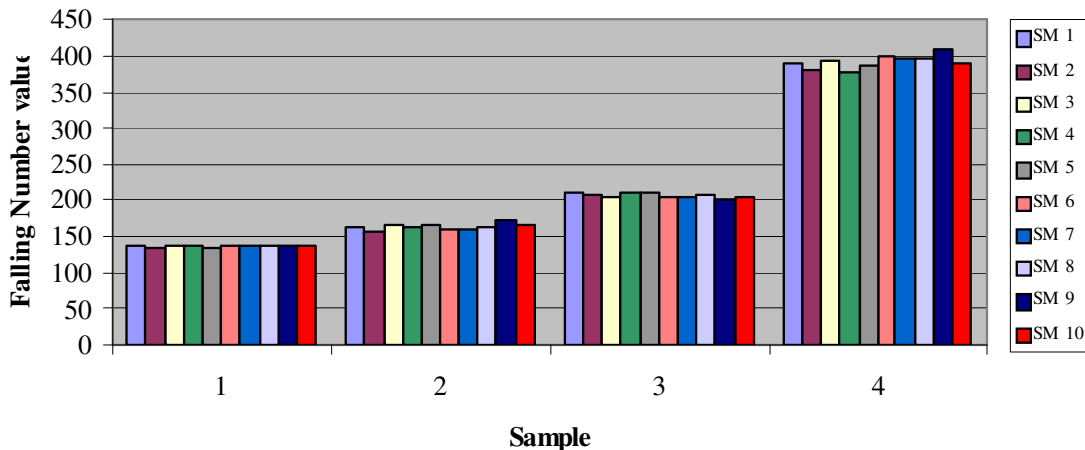
## Experimental

Ten individual Shakematic 1095s were used for to mix four wheat flour samples for Falling Number analysis. The samples covered a range of Falling Number 150-400. A Falling Number 1700 was used to perform all Falling Number tests. All samples were prepared and analyzed in duplicate.

## Results

The chart below shows the Falling Number results for each sample, mixed on each of the 10 Shakematic units (averaged result from duplicate analysis). Standard deviation and maximum difference are found in the table.

**Shakematic reproducibility**



Sample ID	FN - Ave	STD	%	Max Diff
1	144	1.3	0.90%	+/- 2
2	159	4.8	3.02%	+/- 8
3	202	3.2	1.58%	+/- 5
4	396	9.6	2.42%	+/- 15

## Discussion/Conclusions

Sample preparation is an important component of the Falling Number Method. The Shakematic mixes samples effectively and reproducibly. The error of the FN Method is +/-5% relative and these numbers are all well below that error. In addition to improved results, the Shakematic speeds throughput of samples for high volume labs and reduces operator fatigue.