Development of a steam frothing system for testing “Barista”-specialties

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ABSTRACT

Milk for “Barista”-applications needs to possess special properties to maintain good foam stability throughout the desired time frame of consumption. Stability of generated foams has been shown to differ from one milk production batch to another, as well as throughout shelf-life. A number of studies have explored the effect of various factors on foaming properties [1, 2, 4]. On the one hand, different types of coffee machines are used to study foams, however this limits the adjustment or recording of foaming variables [3]. On the other hand, lab frothing systems support extended control and recording of frothing variables, but do not have much in common with “Barista”-Systems [2]. Furthermore, comparison of literature values is difficult due to the high variety of methods for foam generation and analysis. Therefore, a method for reproducible testing of foam stability of milk products, protein suspensions and analogue products was established. A foaming device was developed with precise air and steam control by way of flow adjustment and pressure control, respectively, in order to set final sample temperature and foam volume. The system generates foams with narrow bubble size distributions, which allows reproducible stability testing by minimizing foam coarsening. Further adjustments can be carried out to simulate processing conditions in former studies conducted using different systems.

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