18.2 Flour Treatment is an Essential Part of the Industrial Production of Flour

Wheat is of increasing importance for feeding the world's population, whose growing number and changing food consumption habits require more and more wheat flour. At the same time the processing of wheat flour is changing; although small craft bakeries still predominate in many parts of the world, industrial bakeries are taking an increasing share of the market and thus of the raw material, flour. In these bread factories it is not uncommon to find engineers at the production line rather than bakers. The direct interaction of the raw material or dough with the person responsible has been reduced to a minimum, and this necessitates a minimum of fluctuation in the properties of the raw materials since the machines do not (yet) have a "feeling" for the dough. Consequently, the flour producer, the mill, is considered responsible for uniform flour quality. This goal of standardization is achieved by the art of milling and with flour improvers. At bakeries, specialization of the flour is carried out by means of bread improvers. The ingredients used on both levels are often the same. The main difference lies in the dosage of the improver preparation: typically 10 - 100

ppm at the mill, 1,000 - 100,000 ppm at the bakery (0.1 - 10%). The continuous production of large amounts of flour at the mill requires additives with good flow properties as well as low dosages. This means that additives such as emulsifiers or fat powders that tend to form lumps are not suitable, and salt and sugar are not added at the mill either because of their high dosage. Flour mills generally apply single ingredients separately – only occasionally in premixes – whereas bakeries apply bread improvers composed of several additives. This chapter mentions the most common flour improvers. They may also be part of bread improvers.