

Title Distribution of microbial contamination within cereal grains
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Abstract

Some of the microorganisms present in cereals constitute a potential problem since their development may alter the properties of the grains, and the mycotoxins produced by some moulds could potentially pose a health risk. It has been reported that these microorganisms are located close to the surface of the grain, but the real thickness affected by microbial contamination has not been determined. In this paper, the distribution of microorganisms present in wheat has been studied by controlled debranning. An abrasive mill has been used to remove the outer layers of the wheat kernels and the process has been monitored by scanning electronic microscopy. The total mesophilic microorganisms and moulds contained in the pearlins have been measured. The contamination profiles obtained showed that in fact most of contamination was located close to the surface of the grain and the thickness affected has been estimated. Results show that by removing only some of the outer layers of the grains (pericarp) it is possible to substantially reduce the microbial contamination.