

**Title** Detection of age and insect damage incurred by wheat, with an electronic nose  
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#### **Abstract**

Wheats of five storage ages and with 15 degrees of insect damage were evaluated and classified by the static-headspace sampling method using an electronic nose (E-nose). A commercial E-nose (PEN2) comprising 10 metal-oxide semiconductor (MOS) sensors was used to generate a typical chemical fingerprint of the volatile compounds present in the samples. Principal-component analysis (PCA) and linear-discriminant analysis (LDA) were applied to the generated patterns to achieve classification into the five groups of different storage-age wheats and the 15 groups of different degrees of insect-damaged wheat. The results obtained indicated that the E-nose could discriminate successfully among wheats of different age and with different degrees of insect damage.