

**Abstract:**

Two complementary applications of the SPME technology have been developed in the field of strawberry quality evaluation. The first one concerns the determination of pesticide residues in this fruit. The results obtained by using SPME coupled with GC or HPLC, proved the method to be largely as efficient as traditional methods and make the analysis simpler, faster, cheaper and more environmentally friendly as it is a solventless sample preparation technique. The second one is relative to characterisation and classification of the aromatic profiles of strawberry varieties in view of selective crop breeding. The proposed method, when coupled with an adequate statistical interpretation method, should provide an interesting alternative to sensory evaluation which is the reference method but time consuming and laborious.