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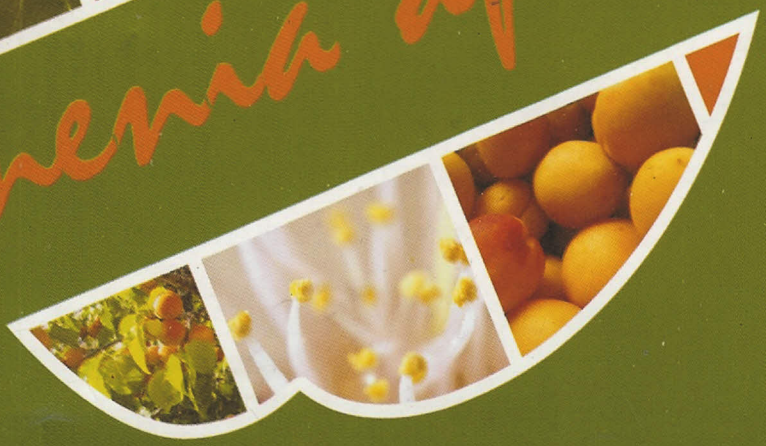

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A RAPID TOOLS FOR PHYSIOLOGICAL STUDY OF APRICOT FRUIT?

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Two wavelength regions in the infrared range have been tested in our laboratory for apricot quality analysis. The near-infrared (NIR, 800-2500 nm) range has been applied on intact fruits and the mid-infrared (MIR, 4000-650 cm^{-1}) one on fruit slurries. The type of samples, fruits or slurries, is dependent on the depth of light penetration. These techniques appear suitable for the characterisation of sugar and acid composition such as soluble solids content, titratable acidity, levels of sucrose, glucose, fructose, malic acid and citric acid.

Good results are surprisingly obtained in MIR spectroscopy for the prediction of ethylene production rate ($\ln(nmol.kg^{-1}.h^{-1})$) on a very large phenotypic variability of apricot, including good correlations for calibration and validation (R^2 = 0.81 and 0.83 respectively) and acceptable errors of validation and prediction (0.86 and 0.84 $nmol.kg^{-1}.h^{-1}$ respectively).

We are now interested in two objectives:

1) Do models obtained on a large phenotypic variability in MIR spectroscopy allow the prediction of ethylene levels on different cultivars, harvested over years and issued from different orchards?

2) Is it possible to use the non-destructive NIR spectroscopy for studying the change of apricot fruit during their maturation and post-harvest?

Compared to the method of reference, FTIR spectroscopy has been shown to be fast and easy applicable. This technique can be adapted to routine analysis in apricot industries.

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