

### **Abstract**

Several varieties of melon have been evaluated under their storability point of view. Destructive (hollow volume, soluble sandy, Magness-Taylor firmness) and non destructive measurements (impact firmness, acoustic response, multispectral features) have been carried out. Acoustic response shows a main variance in the range of 78-225 Hz, decreasing when hollow volume and maturity increase. Multispectral images in chlorophyll band was selected as a suitable complement to acoustic frequency. Non supervised classification at harvest with multispectral camera is strongly correlated with acoustic frequency and impact acceleration. Fusion of acoustic response and multispectral classification allows to differentiate between internal hollows and maturity.