

### **Abstract**

We have investigated whether relaxation time differences can be used to distinguish fresh and mealy apples at the low magnetic fields ( $\sim 0.1$  T) appropriate to a novel on-line MRI sensor. It is found that, at low fields appropriate to the new sensor, the longitudinal relaxation time are most affected by mealiness; whereas at high fields the effects of susceptibility differences dominate and transverse relaxation is most affected. Watercore is most easily detected from a changed proton density. The potential of the sensor for detecting other fruit quality issues is briefly reviewed.