

## **Abstract**

A study was carried out to assess the use of electrolyte leakage measurement to evaluate radiation sensitivity of 13 fresh-cut vegetables, and correlated radiation sensitivity with endogenous antioxidant capacity. Fresh-cut vegetables were gamma irradiated at doses up to 3 kGy at 0.5 kGy intervals. Electrolyte leakage of the samples was measured following irradiation. Electrolyte leakage increased linearly with higher radiation dose for all vegetables. The radiation sensitivity, judged from the rates of the increase in electrolyte leakage as a function of radiation doses and from the doses that increased electrolyte leakage by 50% over the non-irradiated controls varied among vegetables. Red cabbage, broccoli and endive had the highest radiation resistance while celery, carrot and green onion were the most sensitive to radiation. The radiation sensitivity was not necessarily correlated with endogenous antioxidant capacity or phenolics content of the vegetables, which showed large variation among the test samples. Electrolyte leakage may be a useful tool to predict a given product's ability to tolerate irradiation.