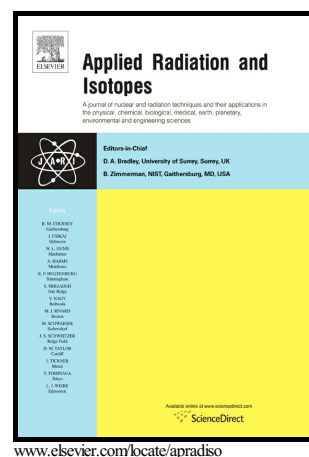


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Analysis and imaging of boron distribution in maize by Quantitative Neutron Capture  
Radiography

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### Abstract

Quantitative neutron capture radiography (QNCR) of  $^{10}\text{B}$  found in pre-dried maize samples has been conducted. Calibration standards constructed from filter paper mimicked plant tissues to reduce confounding matrix effects. A mathematical track elimination method improves the LOD as well as the visual contrast image at low boron concentration levels. The LOD for total boron is  $1.7 \mu\text{g/g}$  in a  $4 \text{ mm}^2$  region of interest (ROI). The  $w(\text{B})$  in five individual maize tassel meristems has been determined to be  $14.9 \mu\text{g/g} - 21.2 \mu\text{g/g}$ .

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