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Non-destructive prediction of internal and external quality attributes of fruit with thick rind: A review

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1 **Non-destructive prediction of internal and external quality attributes of fruit with thick rind:**

2 **A review**

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16 **Abstract**

17 Fruits with thick rind have been reported to interfere with the measurement of internal quality of
18 non-destructive near infrared spectroscopy. This review provides an overview of issues related to
19 the use of near infrared spectroscopy for measuring internal and external quality attributes of
20 horticultural produce with thick rinds. The use of other non-destructive techniques for assessing
21 internal and external quality thick rind fruit, such as hyperspectral and multispectral imaging
22 systems, X-ray micro-computed tomography, nuclear magnetic resonance and Raman
23 spectroscopy are also discussed. A concise summary of research and potential commercial
24 application for each of the techniques is highlighted.

25 **Keywords:** Fruit quality, *Punica grantum* L, Near infrared spectroscopy, Hyperspectral imaging,
26 X-ray micro-computed tomography, Nuclear magnetic resonance, Raman spectroscopy

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