

O12-1

## **FACTORS INVOLVED IN DEVELOPMENT OF ELECTRONIC SYSTEMS FOR GRADING GRAINS AND SEEDS**

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The factors involved in development of electronic grading systems for commodities such as grains and seeds include determination of the factors that influence the end-product utilization of the commodities, and the degree to which these can be predicted by electronic methods. The possibility of exchanging existing methods of grading by electronic methods has to be considered. The respective merits of techniques such as Digital Imaging and Near-infrared (NIR) spectroscopy have to be considered. Digital Imaging is a computerized version of visual inspection and grading, whereas NIR spectroscopy has the potential for grading on the basis of composition and functionality. Selection and evaluation of NIR instruments is an important factor, as are sampling and sample presentation to electronic instruments, and particularly the engineering involved in sample presentation. Sample assembly, and software for calibration development are described in the presentation. Finally the impact and implications of introduction of electronic grading are discussed with particular attention to marketing of the commodities.