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COMPUTER VISION GUIDED CHEMICAL THINNING

Démariage chimique effectué par reconnaissance d'images numérique / Computergestützte Bilderkennung zur chemischen Vereinzelung

ABSTRACT

Developments in precision agriculture have been rapid and expertise gained in one crop can provide solutions elsewhere. For SESVanderHave this involved looking at developments in this technology to improve the method for gapping sugar beet trial plots (150,000 plots annually). This is critical so each plot has precisely the same plant population thereby enabling accurate comparison of genetics without being distorted by variable populations. Currently trials are gapped manually.

Working with leaders in computer vision recognition technology, Tillett & Hague and Garford in 2011, SESVanderHave conducted preliminary trials with a mechanical Robocrop in-row weeding machine with computer vision recognition to identify and eliminate any excess plants in each plot. Field trials showed that the detection and plant selection algorithms were working well but mechanical gapping, especially in rougher seedbeds, could be unreliable. It was decided to apply the detection and selection algorithms to the control of a precision spot spraying system with a view to gapping chemically. Initial tests showed the technique to have promise and led to the construction of a specially designed machine. Initial field trials have been very successful.