



REAL-TIME VARIABLE RATE TECHNOLOGIES (VRT)

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OUTLINE

- ▶ VRT Concept and Architecture
- ▶ VRT Applications and Results
 - ▶ Liquid Manure
 - ▶ Herbicide
 - ▶ Forages Harvesting (Mowing)
 - ▶ Planting

PRECISION AGRICULTURE

“... to optimize crop production and reduce the environmental footprint by using new digital technologies.”


- Gebbers, R. and V.I. Adamchuk

GLOBAL NAVIGATION SATELLITE SYSTEM BASED MACHINERY GUIDANCE



VARIABLE RATE TECHNOLOGIES

Adoption limited?



Lack of robust decision making principles
+
High cost
=
Research

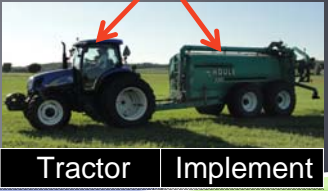
TECHNOLOGY ARCHITECTURE

Internal Sensor
External Sensor
Prescription Map

→

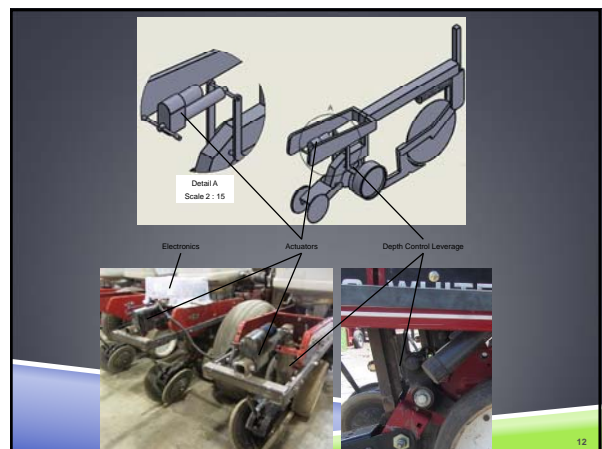
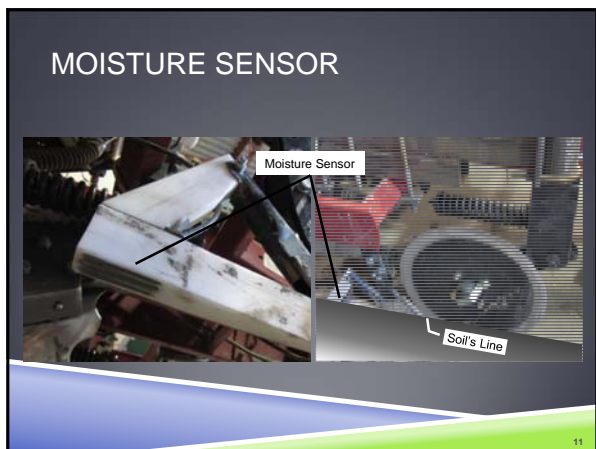
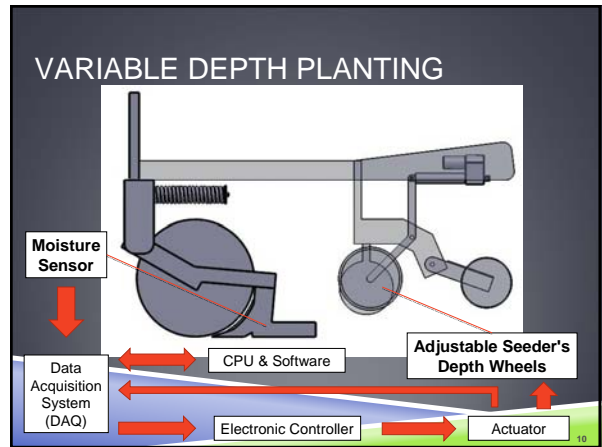
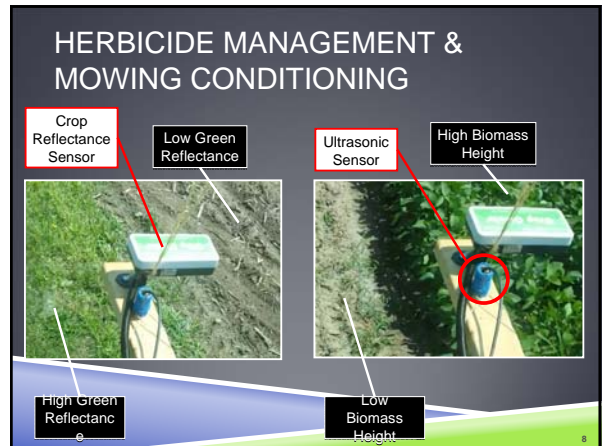
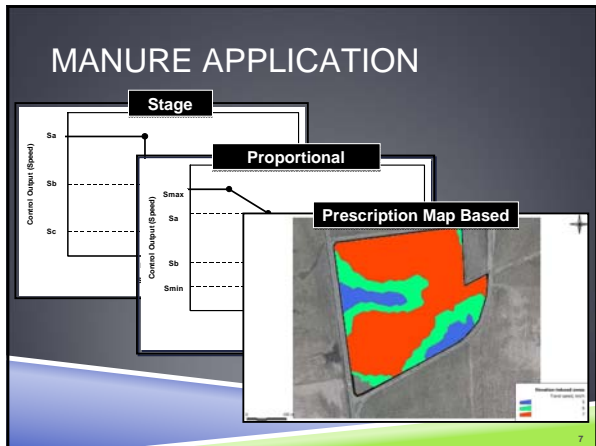
Controller
Algorithm

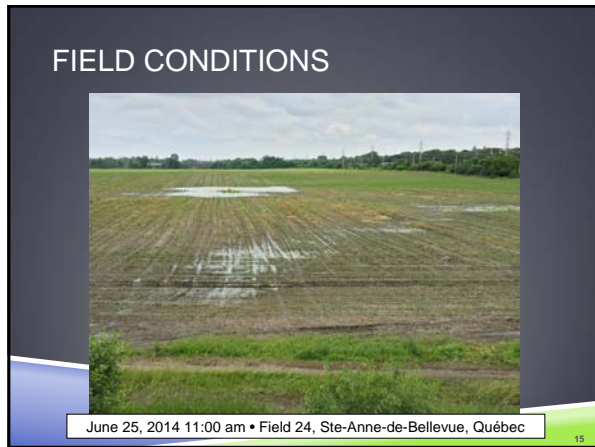
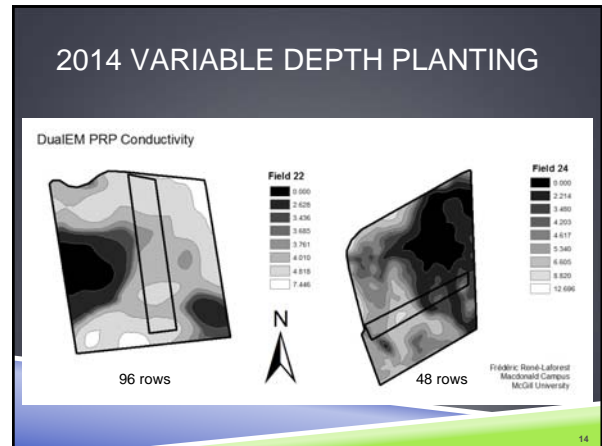
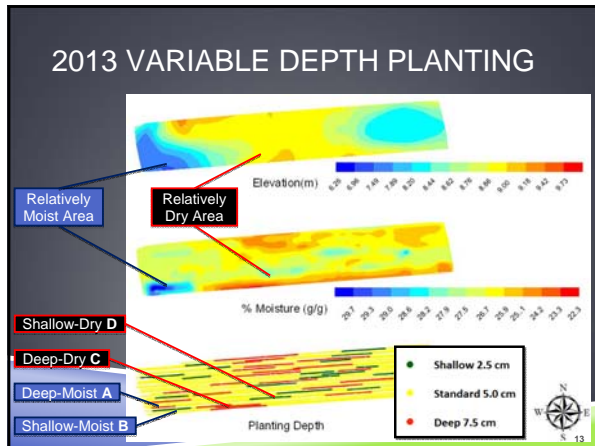
Relation?



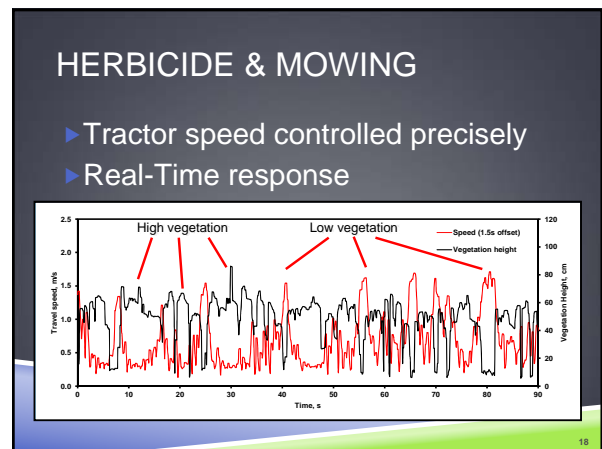
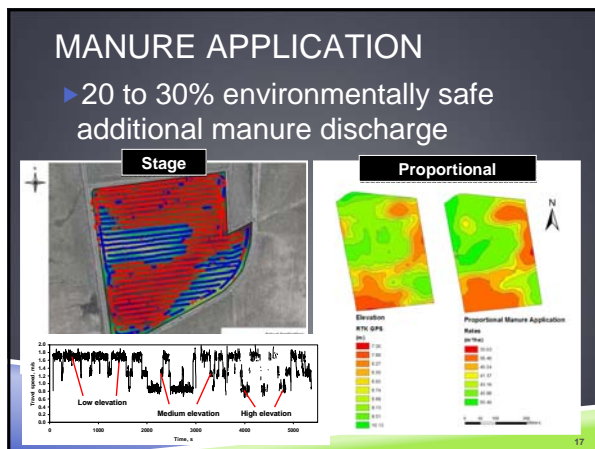
Tractor

Implement





RESULTS



VARIABLE DEPTH PLANTING 2013 EXPERIMENT

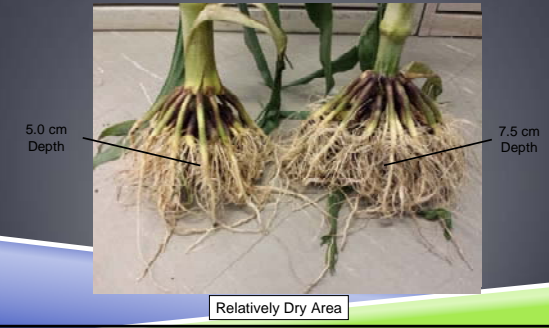
PLANTING: EMERGENCE



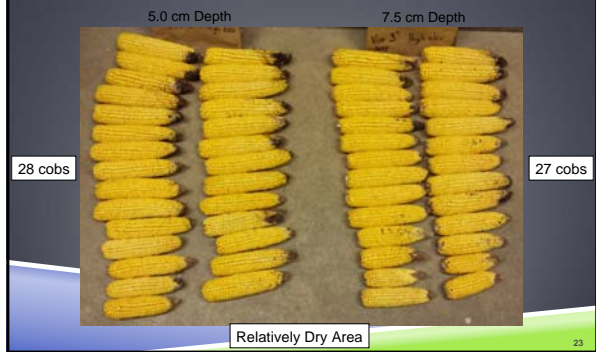
PLANTING: ROOTING SYSTEM



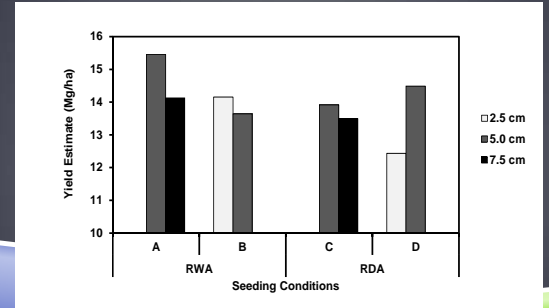
RESULTS: ROOTING SYSTEM



RESULTS: COBS



RESULTS: YIELD



VARIABLE DEPTH PLANTING 2014 EXPERIMENT

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