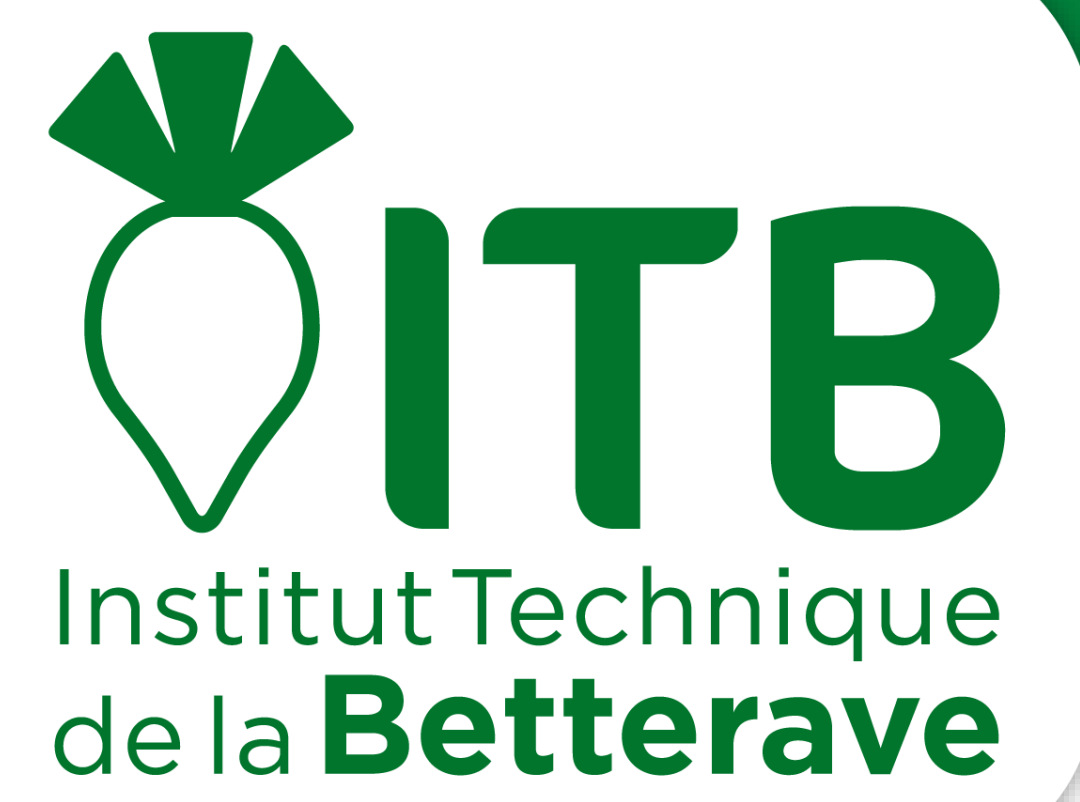




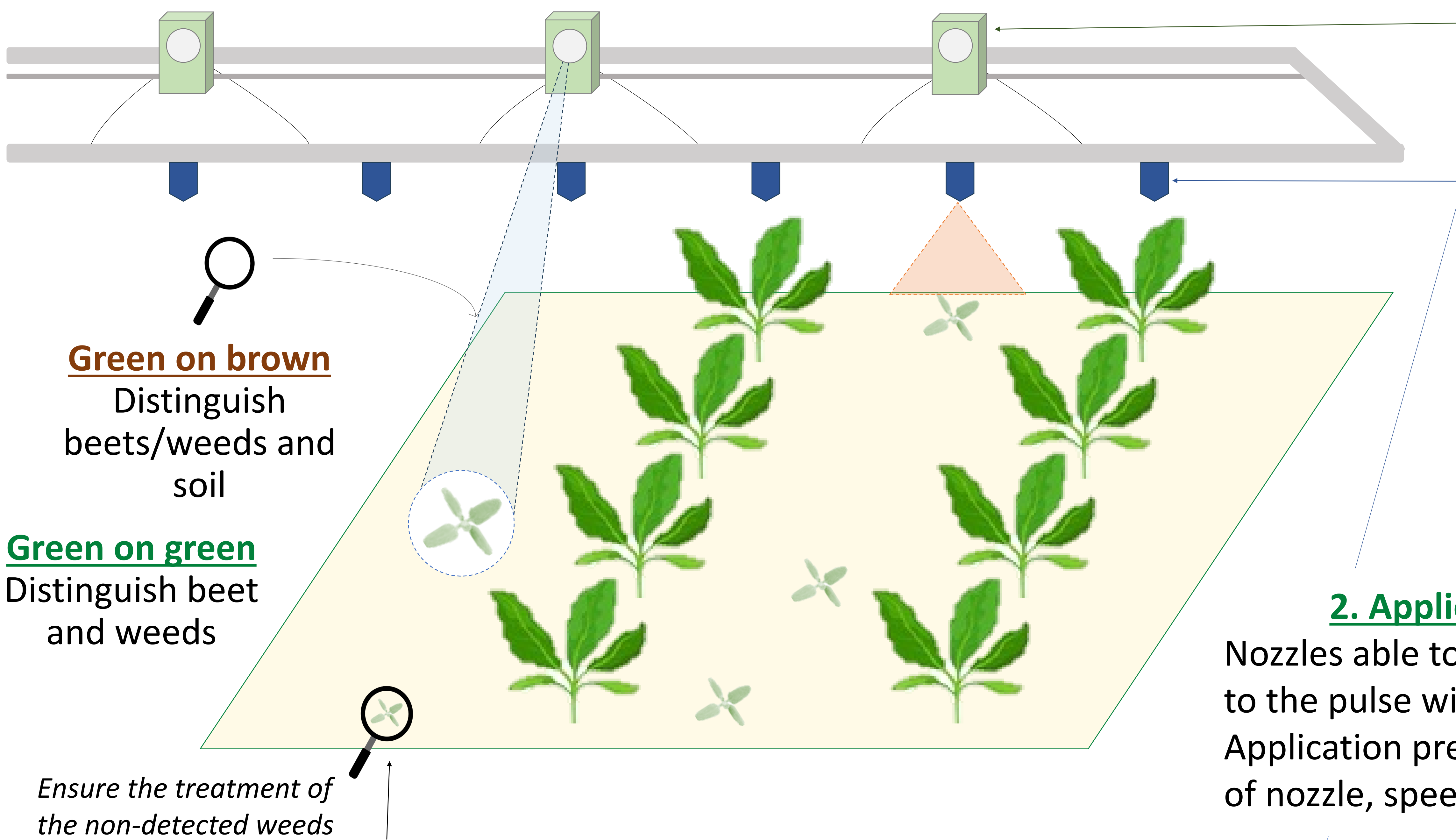
OVERVIEW OF THE LATEST SPOT SPRAYING TECHNOLOGIES IN BEET

Thomas LEBORGNE



SPOT SPRAYING: a way to localize the chemicals directly on the weeds in order to gain efficiency and saving chemicals (mainly use for herbicide application for the moment).

Spot spraying principle with detection system on the boom



1. Detection system on the boom (Camera)

Weeds detection quality vary on camera resolution, number of camera and algorithm calculation power.

Information transfer between detection and application system through computers.

2. Application system

Nozzles able to open/close very quickly thanks to the pulse width modulation system (PWM)
Application precision depend on type, number of nozzle, speed and boom stability.

2 strategies (depending weeds size, type and infestation in the field)

Spray all field at low volume + spot spraying full volume directly on detected weeds in one pass

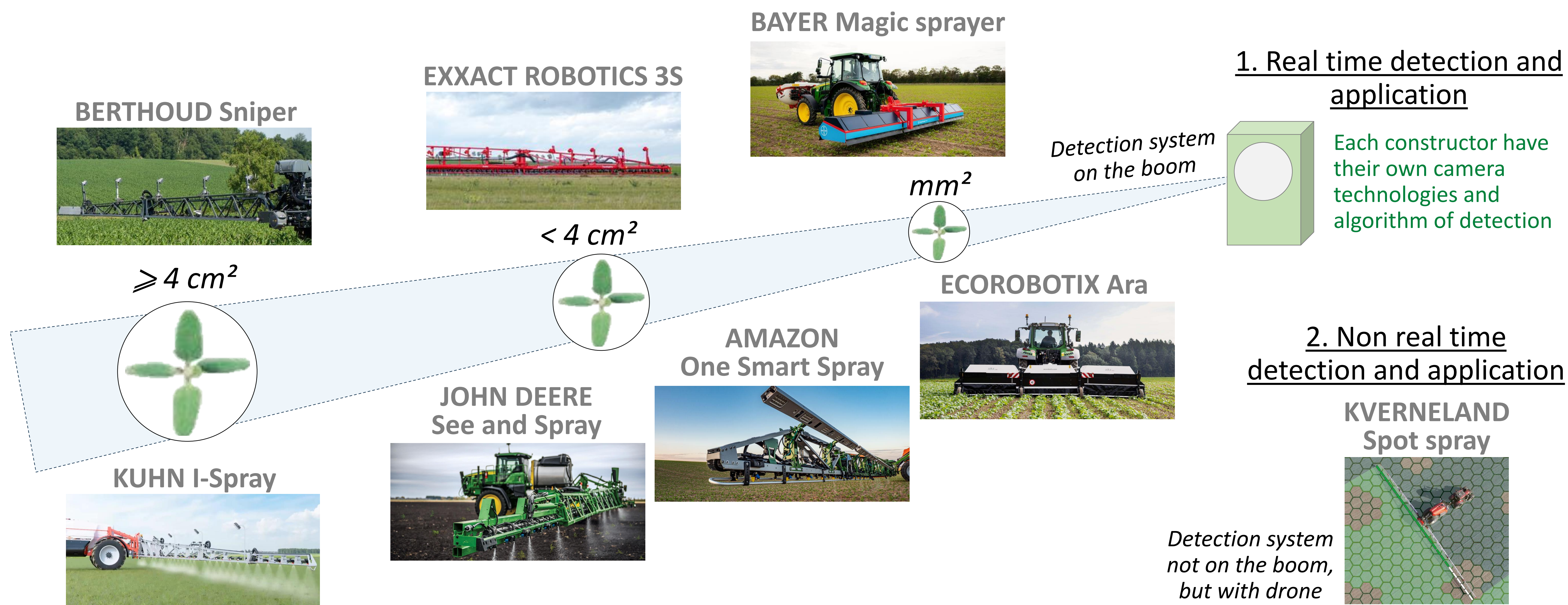
⊕ CHEMICALS REDUCTION

or

Spot spraying only on detected weeds

⊕⊕⊕ CHEMICALS REDUCTION

Overview of spot spraying solutions available in beet according to their detection ability*



*Indicative size according to constructors, may be improved by deep learning