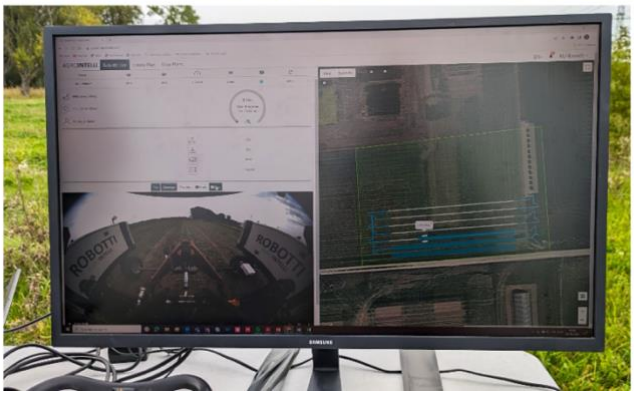
Weed mapping on cereal crop fields ('Thistle tool')

Thistle Tool uses drone images to identify root weeds like thistles and from that creates an allocation map that can be used for spot spraying in the field. By using the Thistle Tool, farmers can reduce the use of plant protection products for pre-harvest weed control by up to 90%. High-resolution images taken with a drone are necessary for this task, as the Thistle Tool identifies weeds by exploiting the colour difference between crop and weed before harvest and it is currently not possible to solve this task with satellite images. Thistle tool is used to minimise the use of pesticides on grain crop fields (i.e., Glyphosate). The use of a drone mounted camera allows the user to map the patches of weed in a field. Then, the weedmap enables a precision application of pesticides, avoiding spraying pesticides in the areas where they are not necessary. The pesticide amount can be decreased significantly if the invasive weed is found only in small patches on the field while the application is limited if the weed infests most of the field. The weed map is georeferenced, and it can be also used to guide a self-driven robot. The self-driving precision sprayer can be fed with the data and weed map produced by the drone and the entire process automatised with a high level of precision. In synthesis, the proper 'thistle tool' is a weed mapping tool, but it is only the first part of the whole precision application system (mapping and precision spraying). The tool is being commercialised for the past 2-3 years (although the number of adopters is unknown and it is still being developed at the University of Copenhagen to serve a broader scope (i.e., the imaging system has the potential for monitoring other aspects of the crop).



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