

Crop uniformity: The key to salad onion success

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1. Background

Crop uniformity is vital to vegetable growers if they are to attain maximal marketable yields. Field vegetables are often marketed as individual whole plants, or components of plants, (e.g. lettuce heads, broccoli florets) and must conform to strict quality specifications demanded by retailers. High levels of crop variability lead to fewer plants meeting the expected standard, reducing yields and increasing waste.

Salad onions, also known as spring onions and scallions, are a high value UK vegetable crop consumed for their immature bulbs and green leaves. Production is highly sensitive to a number of environmental, cultural and biological factors that can affect the crop from seed germination to harvest maturity.

Growers have begun to observe cases of significant in-field variation in salad onion crops with no known explanation (Figure 1). Plants appear variable in terms of size, quality and numbers having a detrimental impact on marketable salad onion yields.

↑ **crop variability** = ↓ **yields**; ↑ **costs**, ↑ **inputs** & **waste**

2. Project aims

- 1) Understand variation that exists within commercial crops
- 2) Identify and characterise those factors that can influence variation
- 3) Provide recommendations that will improve salad onion uniformity and minimise losses from in-field variation



Figure 1. Examples of salad onion crop variability

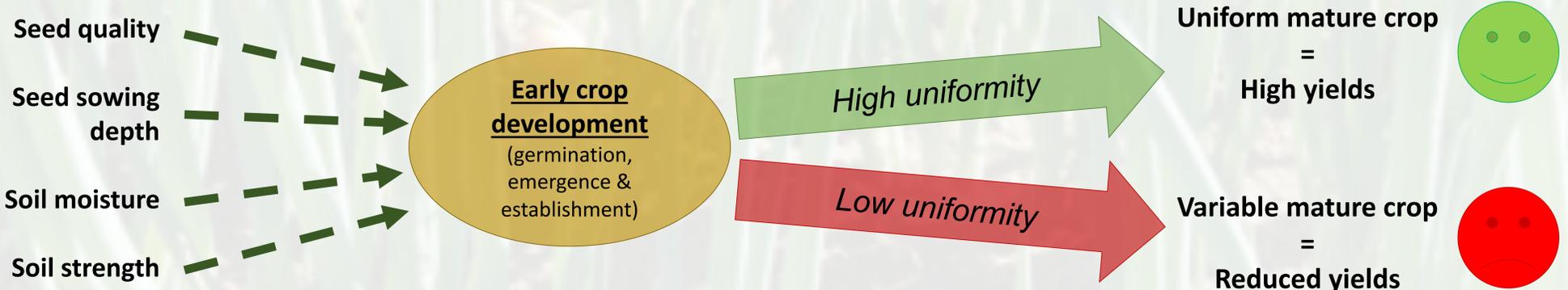
3. Understanding salad onion variation through field monitoring

- Commercial fields monitored intensively over 2018 and 2019 seasons
- Crop variation was observed in a number of fields (e.g. Figure 2), and numerous possible causative factors were identified
- Early crop development though has emerged as an important phase in which variation may develop in commercial salad onion production



Figure 2. Variation between plots within third monitoring trial.

4. Identified factors influencing early crop development



5. Next steps...

Investigate in-depth how factors such as sowing depth, moisture, soil strength and seed quality may influence early crop development, and in turn how these may impact on crop variability and ultimately marketable yields.

Trials will be carried out in both controlled environments as well as on commercial salad onion field sites within Warwickshire, UK

