NIAB TAG Membership

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COVER CROPS – CHOOSE CAREFULLY

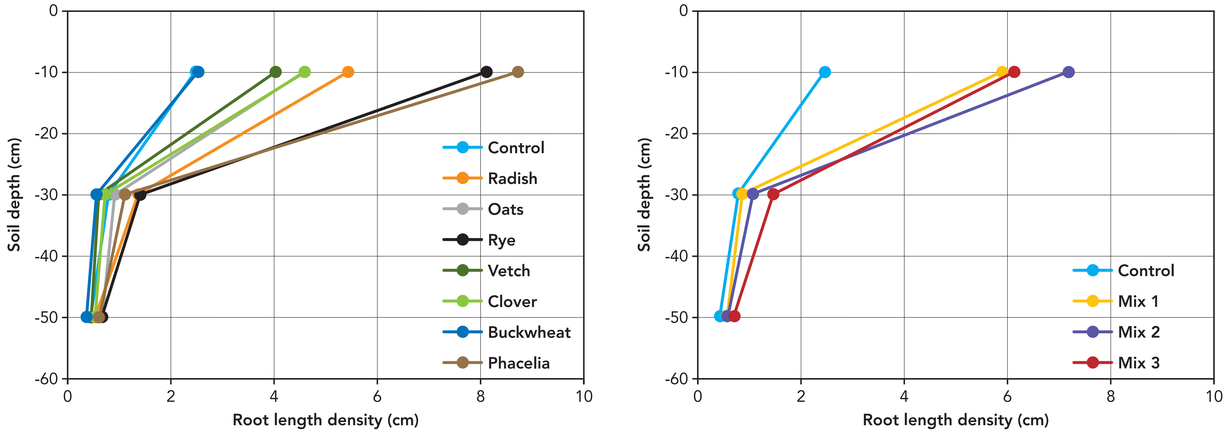
For the benefits of cover crops to be fully realised, understanding what different cover crop species can achieve and how to manage them on different soil types and rotations is crucial.

NIAB was part of an AHDB-funded project 'Maximising the benefits from cover crops through species selection and crop management', studying the effects of different cover crops on soil properties, crop rooting and yield.

focus on NIAB research

- Early establishment (August rather than September) is important to maximise the benefits of cover crops, particularly to ensure good crop cover and nutrient recovery
- Above-ground, radish, buckwheat and a mix comprising radish, buckwheat and phacelia are quickest to establish
- There is little evidence of changes in soil properties following the different cover crop treatments at the large plot experimental sites, and no relationship observed between cover crop rooting and spring crop rooting.

Cover crop root characteristics (cross site) at CC destruction showed that Phacelia and rye had greatest root length density (RLD)



- Below-ground, a rye cover crop produces the greatest amount of roots, both early in the season and at destruction; rye also has the widest root diameter
- Phacelia roots are slower to develop, but by destruction also have a large amount of roots in the topsoil, and produce the narrowest roots
- Phacelia has high specific root length, (SRL = length of root in metres per unit of root biomass in grams), suggesting it explores more of the soil for a given amount of roots compared to the other cover crop treatments. A high SRL is considered to be important for soil structural improvement.

Conclusion

- Economic benefits are unlikely to accrue after a single season so it is important to consider the use of cover crops within a full crop rotation
- Consider rotational conflicts which may affect the yields of following cash crops.

Innovation in SOIL MANAGEMENT

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