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ORC Producer Conference 2016

The importance of the soil for consistent quality crop production

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Acknowledgement

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Consistent quality organic crops

- **Where do you start?**
  - **What will the site and soil produce?**
  - **What does the market want? OR**
  - **What market do I want to supply?**
  - **What labour and/or machinery is available?**
  - **How can the available time be managed?**
  - **Does it make financial sense?**
  - **What do the standards require and what will my certifying body say?**

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You start with the soil

- Everything else is important and potentially crucial BUT
- You need a soil that can deliver consistently in times of troubled climate
- Fertility is vital but this presentation will focus on physical aspects of the soil
- Texture is what you get, structure is what you make it

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Consistency and quality

- Different things to different people
- Needs to happen year in year out
- No such thing as a perfect soil and if there was, you wouldn't be able to afford it
- Things will go wrong – vital to have flexibility and resilience

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The Soil Surface

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Open surface, good infiltration

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Compacted surface, ponding & run-off

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Ruts = compaction & channeling

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Surface cap over good structure

Remedies

- If rolling do it lightly – timing is critical
- Don’t drive on wet soil
- Very light harrow or interrow weeder with fine tines will reduce capping
- Green cover at all times
- Relieve surface compaction when dry

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The Topsoil

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Preparing to take topsoil slice

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Good structure over platy compaction

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Perfect granular crumb structure

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Angular blocks with rusty mottles

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Test for firmness.

Use extended fore-finger and thumb to apply pressure to a 3cm cube of soil. This should be a structural unit (clod) or part of one or a piece cut from a massive soil. Orientate the cube to its position in the profile

Cracks under gentle force = friable
Cracks under maximum force = very firm (solid?)

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Remedies

- Organic matter
- Don’t drive on wet soil
- Good roots
- Green cover at all times
- Fertility breaks rebuild structure but prepare them well

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The Subsoil

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Dig hole deeper for subsoil slice

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Lifting out subsoil slice

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Good subsoil structure

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Absolutely solid subsoil!

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Platy subsoil structure

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Remedies

- Deep roots
- Avoid panning
- Deal with drainage
- Subsoiling followed by deep roots

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Finally

- Be aware – good surface does not always mean it's good underneath. Dig holes frequently
- Physical condition is vital – beware compaction
- Problems can be remedied but not always possible in a timely manner
- The weather can destroy the best of plans - so it is good to have a plan B if possible
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