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AGRICULTURE & HORTICULTURE DEVELOPMENT BOARD

Malmesbury Monitor Farm meeting report

Meeting 3: Soil management

Speaker: Philip Wright

Date: 4 December 2017

Location: Oaksey Golf Club, Malmesbury SN16 9SB

For more information, visit: cereals.ahdb.org.uk/malmesbury

Meeting summary – key messages

- Aim for prevention of soil structure problems – it's a lot easier and cheaper than remedy
- Soil structure target: a soil with 50% porosity, half full of water, half air – a structure that roots and worms can readily penetrate. Organic matter measurement is a good benchmark of progress
- Go into a field with a spade before a tractor; dig holes in and between tramlines and benchmark with a hole under the hedge
- Look at the roots to describe the soil structure
- Less is more! Question whether such a fine seedbed is necessary
- Soil disturbance (cultivation) releases carbon and leads to loss of moisture
- Will cultivation make blackgrass worse or better?
- Regard bare ground as a waste – grow something!
- Axle weights – spread the load
- Tyre pressures – reduce the problem

Soil pits and deciding when to take action

It is important to dig soil pits across a field to assess at what depth the problems in soil structure are occurring. It is also useful in identifying whether any problems are sufficiently widespread to merit whole rather than part-field cultivation. It is also important (and possibly cheaper) to consider if a crop (rooting) choice would correct problems to an acceptable level. Assess the balance between extra cost of mechanical correction which may produce more consistent results across a field, versus crop rooting action.

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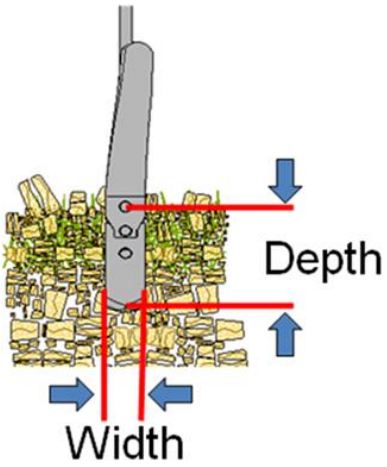
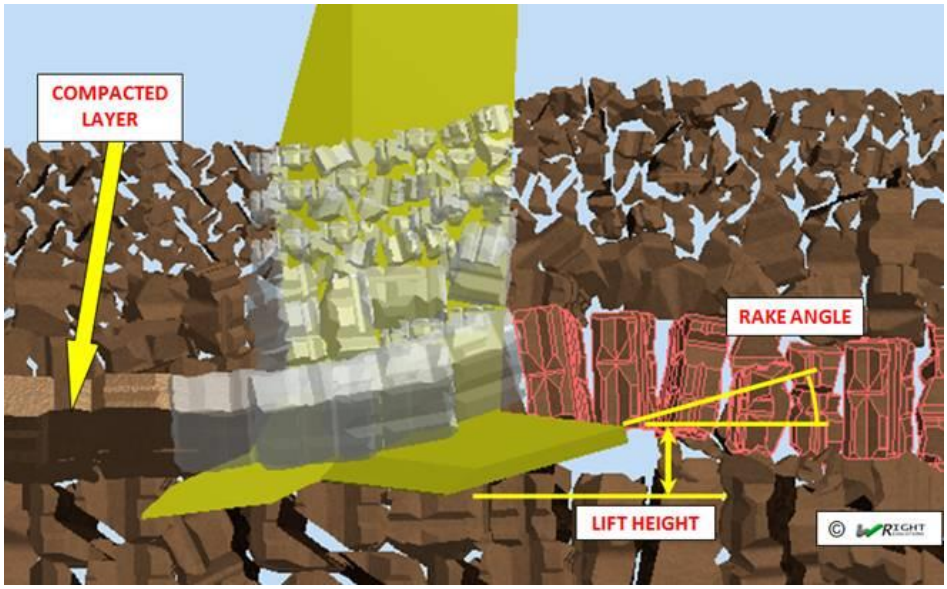
Cultivation basics

- "Worm kit does nothing!"
- Important to set a bent leg loosener to work in the fracture zone, lifting at a 45-degree angle but not creating 'boiling' action. The angle reduces nearer to vertical as sand content of soil increases
- Tine settings – every tine has a 'critical point' for depth of working. If tine goes below critical point, soil movement action goes sideways rather than lifting
- Rule of thumb: Chisel tine tip width x 6 or 8 = critical depth, eg 2" tip gives 12–16" critical depth. Need to ensure lifting to achieve pan fracturing but not to extent soil clods are pulled up
- If tip winged, need to consider rake angle (between wing surface and horizontal):
  - Too shallow – no pan fracturing action
  - Too steep – creates compression, clod lifting, increased diesel usage





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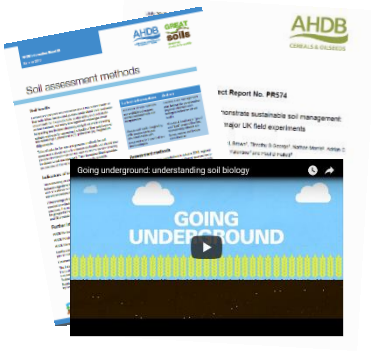
Machinery

Getting the most from your machinery
Webinar: Machinery for farming or farming for machinery?
Machinery cost calculator
Platforms to test and demonstrate sustainable soil management: integration of major UK field experiments



Soil

AHDB soils research
GREAT Soils
An introduction to soil biology
Understanding soil biology video
For more information on soil, visit cereals.ahdb.org.uk/soilresearch

Next meeting

Date: 6 February 2018
Topic: Grassland weed management (Chris Padfield)
Time: 11:00
Location: Oakey Golf Club, Malmesbury SN16 9SB

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