

# Diss Monitor Farm

## HEADLAND MANAGEMENT TRY-OUT

Richard Ling and the Diss Monitor Farm carried out a try-out in autumn 2019, along with David Purdy, John Deere and Carl Pietlen, Ben Burgess to look at the effect of axle weights, tyres and tracks on headland compaction.



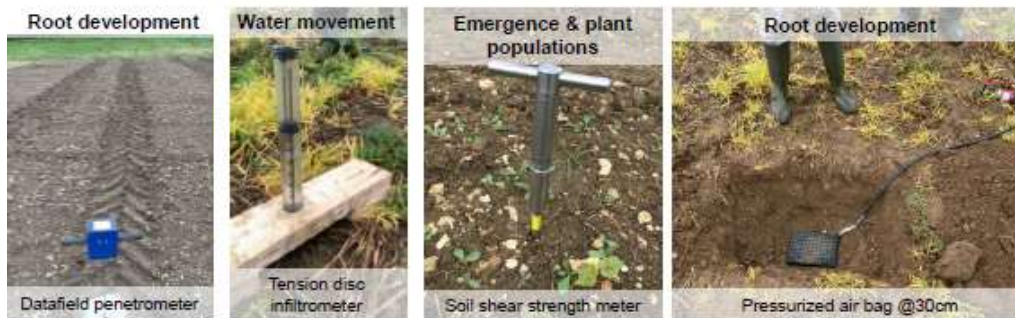
Four different systems were used. These included the:

- Cat 765 with 30 inch tracks
- John Deere 8295R with tyres at 10psi
- Fendt 724 at 18psi
- Fendt 724 at 10psi

The details of the axle weights over the weighbridge are as below. As the conditions were too wet to drill, the RLM was used on the back as a proxy for all testing.

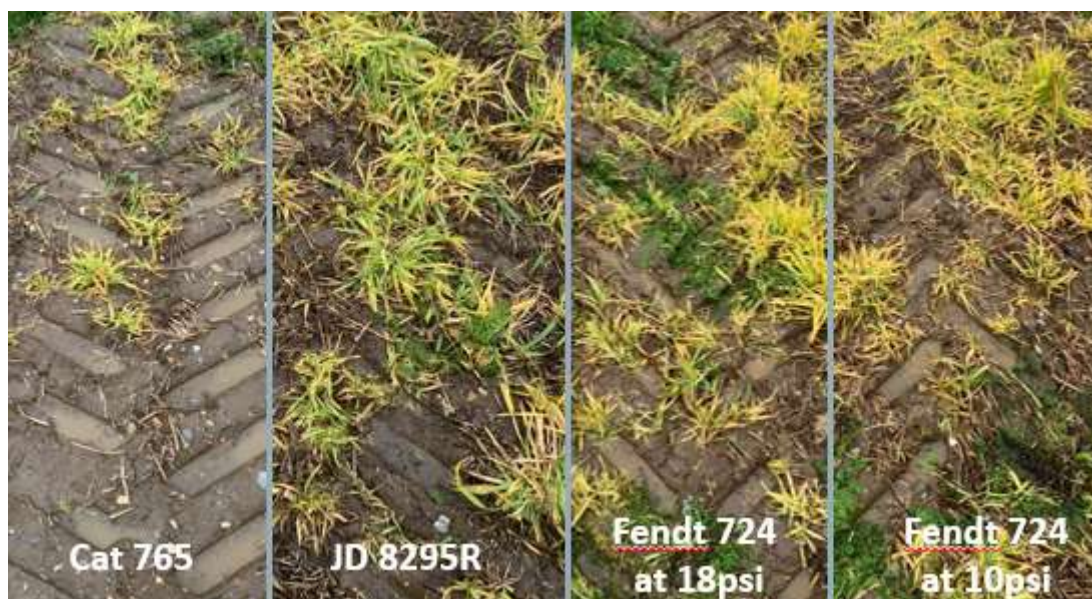
|  |             |  |           |  |
|------------------------------------------------------------------------------------|-------------|------------------------------------------------------------------------------------|-----------|--------------------------------------------------------------------------------------|
| John Deere 8295R with Rapid Lift                                                   |             | Fendt 724 with Rapid Lift                                                          |           | Challenger 765 with Rapid Lift                                                       |
| 1100/45 R46                                                                        | 1000/40 R32 | 650/65 R42                                                                         | 540/65R30 | 30" Tracks                                                                           |
| 9810kg                                                                             | 5540kg      | 7360kg                                                                             | 3500kg    | 17450kg                                                                              |
| 10psi                                                                              | 10psi       | 18.5psi                                                                            | 18.5psi   |                                                                                      |
|                                                                                    |             | 10psi                                                                              | 10psi     |                                                                                      |
| 15400kg                                                                            |             | 10860kg                                                                            |           | 17450kg                                                                              |

At each pass, a wide turn, tight turn and two straights were done with each machine. These were then measured using the measurements below:



The results in the field are shown below:



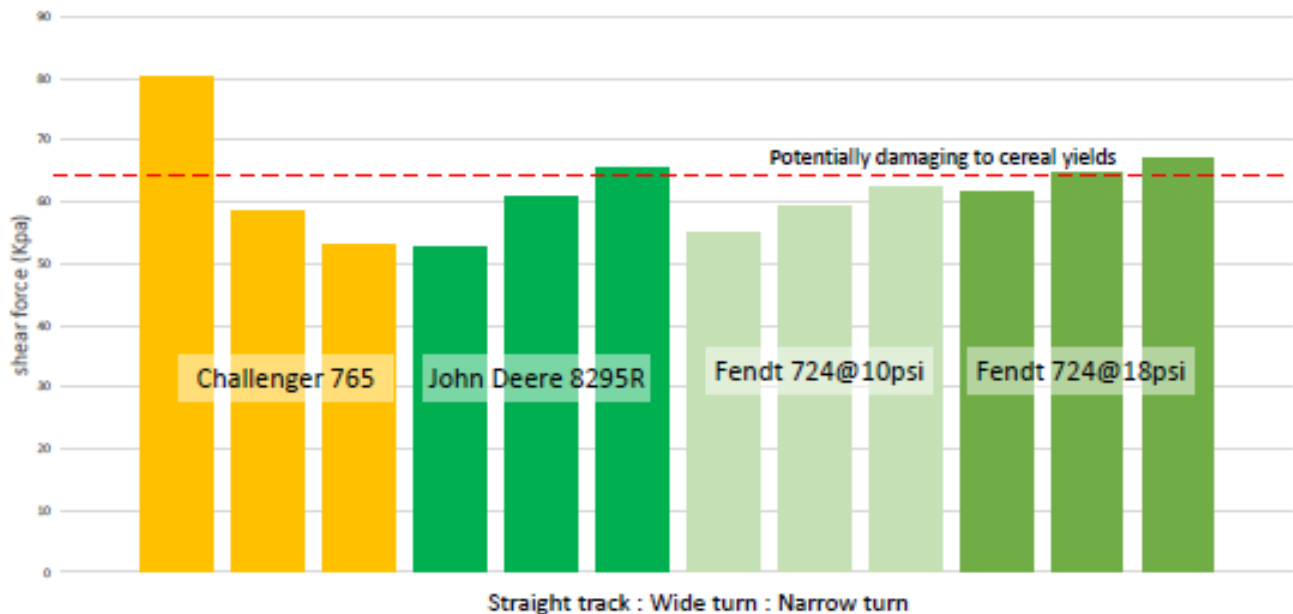


The measurements of resistance using the penetrometer show the effect of compaction to depth. Note the differences between the tyres and tracked machines, with the Fendt 724 at 10psi having least effect and the Challenger 765 having the most effect on compaction.



The shear force measurement also showed the effect on soils from the different machinery and the potential effect on rooting of the crop being established:

## Shear forces (Kpa) at 10cm



The conclusions from this try-out reinforce previous work done in this area. All operators should aim to keep axle weights below 6 tonnes where possible; keep tyre pressures at or below 10 psi in the field, keep turns as wide as possible and use tyre technology as well as the correct power to weight ratio in order to maximise soil and plant health.

## Further Information

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