

## Vaderstad Ltd Shallow Tillage Trial 2000-01



### Background:

During 2002, many UK farmers started to consider using shallow tillage as a means of crop establishment in the hope that it might reduce growing costs.

Within the UK a range of primary cultivation machines were available. Heavy discs were well proven, and the standard choice of most farmers wishing to use something other than the plough. Vaderstad had recently introduced the 'Carrier Disc' shallow cultivator, and Simba were offering the 'Horsch FG' cultivator.

This trial was set up by James Moldon, Farm Manager at Stanaway Farm, Otley, Suffolk, England. James had formerly been involved with many trials on the farm with 'The Felix Thorney Agricultural Trust' and 'Morley Research Centre' and has trials on the farm every year with approximately 400 people per year visiting the farm and its' many trial sites.

The shallow tillage trial, although not replicated, was set primarily as an exhibition piece for the visiting farmers.

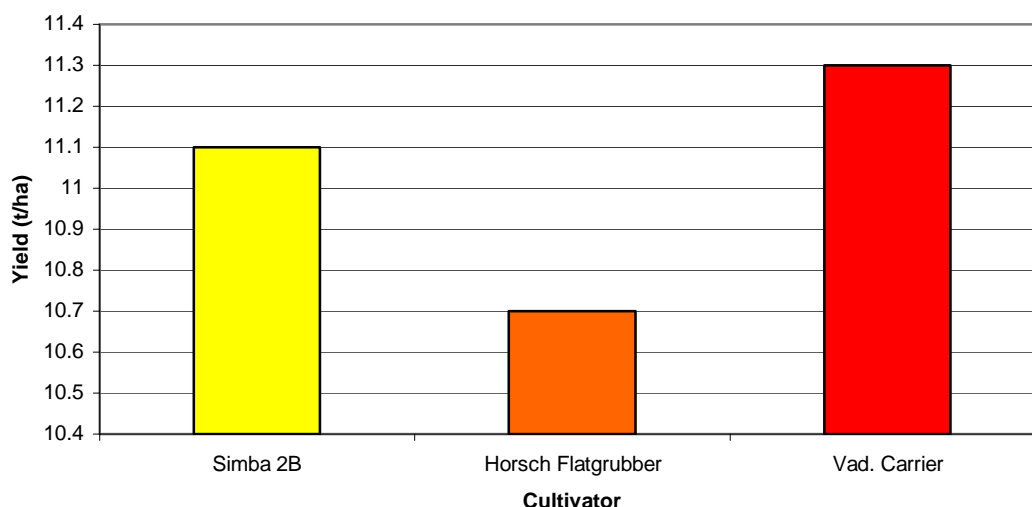
### Method:

1. It was considered shallow tillage was not likely to be suitable for wheat following wheat, so the trial was limited to 1<sup>st</sup> wheat following a crop of winter Rape.
2. Two fields with fairly consistent soil types were used for the trial. Each was split into 3 blocks with one cultivator to prepare each.
3. Cultivations were performed as soon as possible following the combine.
4. Each machine manufacturer was responsible for the operation of his machine.
5. Each manufacturer was able to choose the number of passes adopted.
6. All cultivations were performed on the same day.
7. Depth was limited to 5cm for the shallow machines (Horsch and Vaderstad); the Simba discs were run at 10cm to reflect their normal operating practice.
8. Drilling was carried out by the farm manager with his standard power-harrow/combination drill.

## Results:

1. The different machines left very different results at the time of cultivation.
2. It was quite difficult to limit the working depth of the tined cultivator on the heavy clay soil. It had a tendency to pull out large clods in the dry clay (see pictures above).
3. It was necessary to press the land after the Horsch cultivator and Simba discs to break some clods and aid moisture retention.
4. No further actions, other than spraying, were needed where the Vaderstad Carrier had been.
5. Yields were measured at harvest giving the following results.
6. **Important Note:** The yields were measured using the farms' MF combine fitted with a mass grain weigher. However, as the weighing tool was not officially calibrated, and the plots were non-replicated, accuracy of the data has to be questioned. Results are for discussion purposes only.
7. Yield differences between the three treatments were quite small, but the Vaderstad Carrier did give the greatest overall yield.
8. All yields were quite high. There was not a control in the form of a plough-based plot, but the yield obtained was similar to the 5 year farm average suggesting that there was no direct yield penalty from not ploughing.

**1st Wheat Shallow Cultivation Trials 2000-01**



## Conclusions:

1. Reducing the depth of cultivations to 5cm when establishing wheat after Rape on dry clay soil can give some good crop yields.
2. It is important to understand the working characteristics of tines and discs in differing soil types.
3. A tined cultivator may leave a very cloddy finish when operated into dry, clay soil.
4. It can be difficult to limit the operating depth of a tine in dry, clay soil.