

# Farming for a Better Climate



## Controlled Traffic Farming at West Mains of Kinblethmont

West Mains of Kinblethmont, managed by Robert Ramsay in partnership with his family, covers 750 hectares and grows winter wheat, spring and winter barley, oilseed rape and both ware and seed potatoes.

After using min till (minimum tillage) techniques and linking this with yield mapping, Robert identified that even light trafficking was having a measurable impact on crop yields. Robert saw controlled traffic farming (CTF) as a way to protect farm soils and improve yields if it worked for his farming system.

This case study looks at the idea behind controlled traffic farming, explains some of the pros and cons and looks at how Robert moved towards

controlled traffic farming and some of the benefits seen at West Mains of Kinblethmont.



Name	Robert Ramsay
Farm	West Mains of Kinblethmont
Locality	Angus
Farm type	Arable
Size	750 ha

### How might climate change affect Kinblethmont?

Climate change is predicted to alter our 'normal' weather patterns. Robert said *"Currently the main issue for us is rainfall. We are getting very dry and/or very wet summer conditions – this is especially an issue on the lighter land, however on the heavier land the winter rainfall doesn't always get away. Flash flooding events can be a problem for us, especially as we are on a floodplain."*

Following the switch to controlled traffic farming, Robert has found that both the water holding capacity and the speed of water percolation has improved. Protecting and improving farm soils should go some way towards reducing the risk of yield losses compounded by unpredictable weather events.

### Case Study

Find out what other farmers are doing to improve profitability and adapt to a changing climate in our series of case studies.

There are five sets of Practical Guides covering :

Use energy and fuels efficiently

Develop renewable energy

Lock carbon into soils and vegetation

Optimise the application of fertilisers and manures

Optimise livestock management and the storage of manure and slurry

Find further information, including links to other Practical Guides and Case Studies, at



[www.farmingforabetterclimate.org](http://www.farmingforabetterclimate.org)

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### Websites

[www.farmingforabetterclimate.org](http://www.farmingforabetterclimate.org)  
[www.adaptationscotland.org.uk](http://www.adaptationscotland.org.uk)  
[www.controlledtrafficfarming.com](http://www.controlledtrafficfarming.com)  
[www.agrecalc.com](http://www.agrecalc.com)



2015  
International  
Year of Soils



# West Mains of Kinblethmont



## CTF; pros and cons

Benefits from controlled traffic farming can include:

- Improved profits; better crop yield due to improved soil structure
- More efficient nutrient use through better root access to nutrients
- Improved structure aids water infiltration, storage and drainage
- Improved drainage reduces soil erosion and flooding damage risks
- Fewer and less intensive cultivations benefit a range of soil-living animals including earthworms
- Savings on the fuel bill - especially at crop establishment
- Extended work window within CTF lanes
- Can use cheaper to run, lighter machines
- Use of GPS technology means no under or over-lap

No system is perfect however, and the main issue Robert faces is slugs, mainly in late rape after wheat. The straw rake seems to be helping with this.

## What is Controlled Traffic Farming?

Using set tracks identified by GPS, controlled traffic farming keeps vehicles in the same pre-set areas of the field. This keeps machinery and trafficking off the majority of the ground, protecting farm soils from compaction and damage.

The move towards heavier farm machinery has increased the risk of damage to soil structure; it can be hard to keep tyre pressures low enough avoid compaction getting deep into the soil profile, compressing soil pore spaces and causing issues for the growing crop. This is especially an issue on wet soils.

Controlled traffic farming is a way of minimising trafficking, and reducing associated yield penalties due to poor root penetration, reduced water holding capacity and restricted nutrient access within compacted ground.

## CTF at West Mains of Kinblethmont

Robert saw first hand the negative impact routine trafficking had on soil structure and the affect this had on crop yields.

Robert said *"We moved gradually across to controlled traffic farming; we wouldn't have wanted to go straight to into it. First we had to prove there was merit in it via min till and yield mapping work. Through ploughing and drilling separately, versus ploughing and drilling at the same time, then comparing yield data from these different treatments within the same field, it helped us to quickly build confidence in the system and give it a go. Monitoring was key to help inform our decision. When we investigated controlled traffic farming we found we could get most of the benefits we were looking for without too much of a change to existing machinery"*.

Where crops are sown in the controlled traffic line there is a marked difference in plant performance, both above and below ground, allowing for better root structure and development (see photo).

At Kinblethmont, the wider track for the harvester is on a 9m base whereas drilling is done on a 6m base. The Baler has to go where the straw is so naturally follows the CTF line.

Aside from added yield benefits, Robert has estimated that the move to CTF has **saved around 40% of fuel and time** when establishing a crop compared to the old plough and till system.

