

Tim Chamen

CTF Europe

Practical steps to reduce traffic in arable and vegetable production – a CTF approach

Arndt and Rose, 1966

- “Excessive traffic necessitates excessive tillage”
 - in other words
 - the more you run on it, the more tillage you need!



More compaction has always been expensive!

BRUTON TURNPIKE, BATCOMBE GATE.	
For every Horse or Mule drawing any Coach, Barouche, Sociable, Chariot, Landau, Chaise, Phaeton, Curricule, Gig, Cart upon Springs, Hearse, Litter, or other like Carriage.	<i>Tolls</i> D 4½
For every Horse or Mule drawing any Waggon, Cart, Caravan or other such Carriage ~ having the felles of the wheels of less ~ breadth than four and half inches.	6
Ditto of the breadth of four and half inches, and less than six inches. ~ ~ ~ ~ ~	5
Ditto six inches and less than nine inches.	4
Ditto nine inches and upwards. ~ ~ ~	3

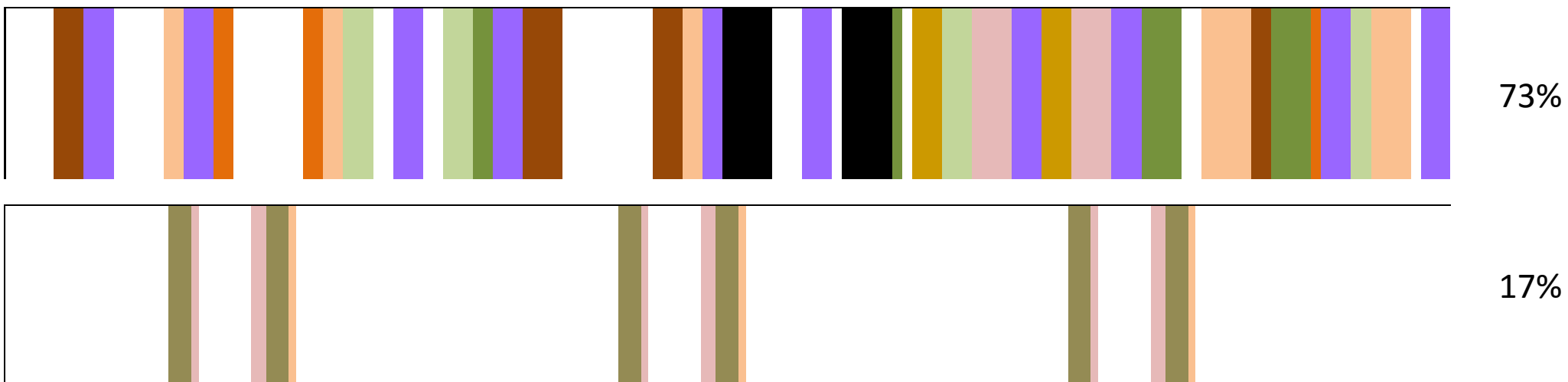
The birth of
low ground
pressure
systems?!

What CTF is and what it does

- Confines all traffic to least possible area of permanent lanes (CTF)
 - Uses RTK auto-steer (± 2 cm) together with:
 - common track gauges
 - common implement widths
 - Tracking typically reduced from 45 – 200% to just 15 – 30%



Skabernas
Sweden
arable,
before
and after
CTF



First steps to controlling traffic

- Invest in RTK auto-steer
 - great benefits over and above CTF
 - minimise receivers by using markers where practical



Create a machinery inventory

- Know what you have
 - measure, don't rely on literature
 - consider CTF options
 - OutTrac
 - TwinTrac
 - AdTrac
 - If no whole system options take one step at a time

Farm name: _____ Date: _____



Controlled Traffic Farming Machinery Inventory

Table 2. Machinery detail – tractors, self-propelled and trailed

Machine	Track gauge ² , m		Tyres or belt width, m		Notes ³
	Axle 1	Axle 2	Axle 1	Axle 2	

Farm name: _____ Date: _____



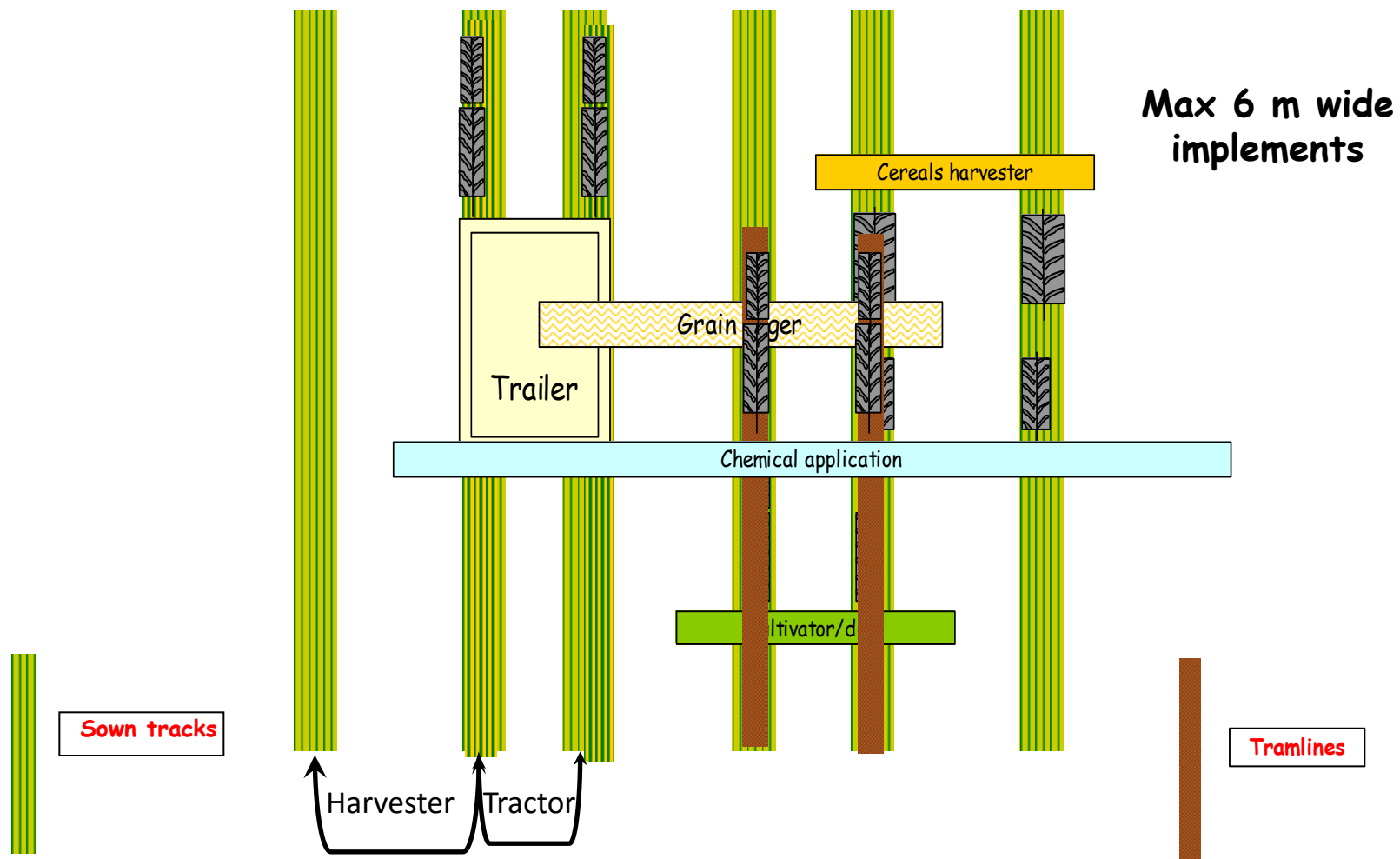
Controlled Traffic Farming Machinery Inventory

Table 3. Machinery detail – implements

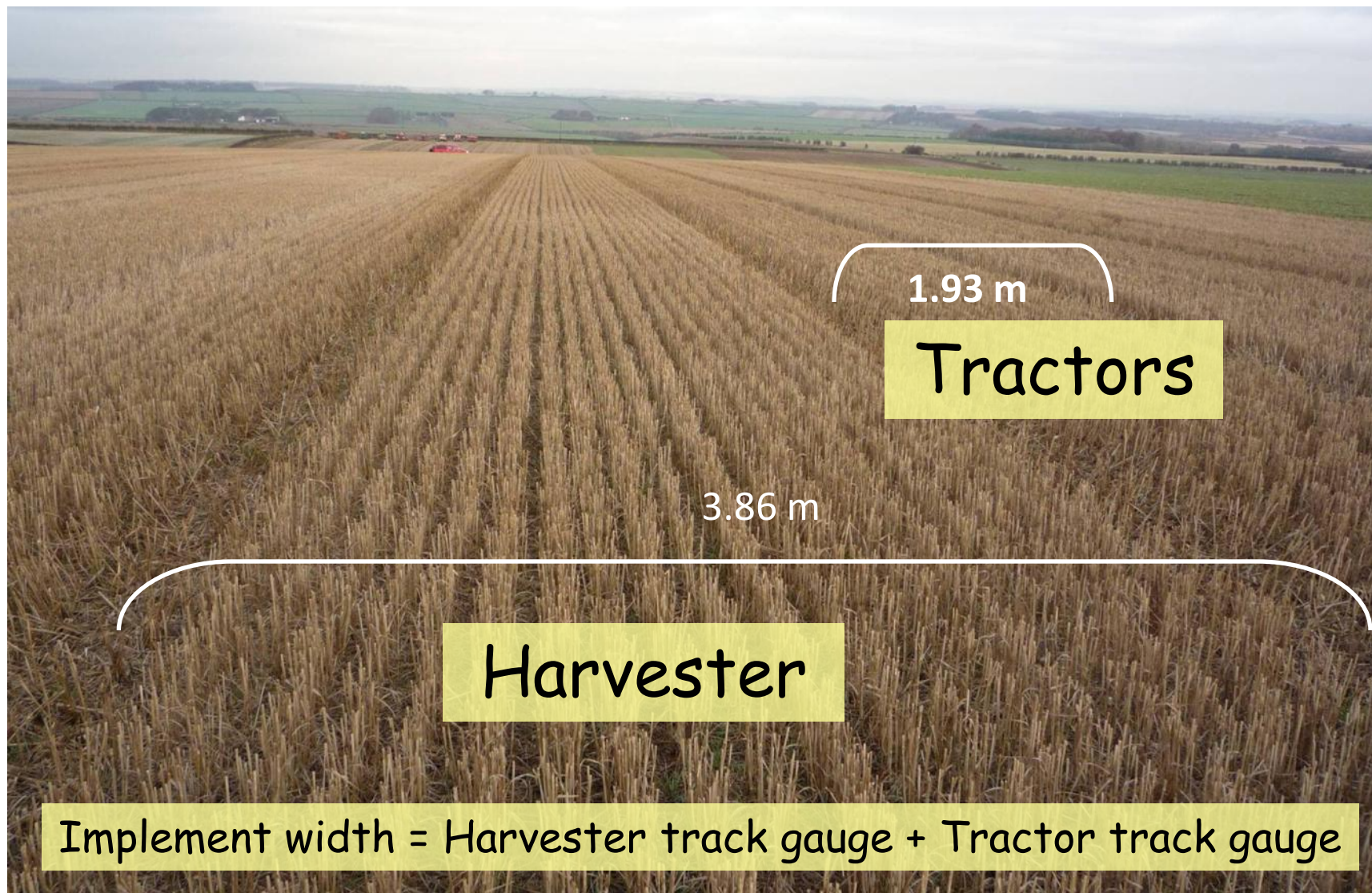
Implements (as identified in Table 1)	<u>Measured</u> working width, m	Operating width (if different from Measured)

CTF options

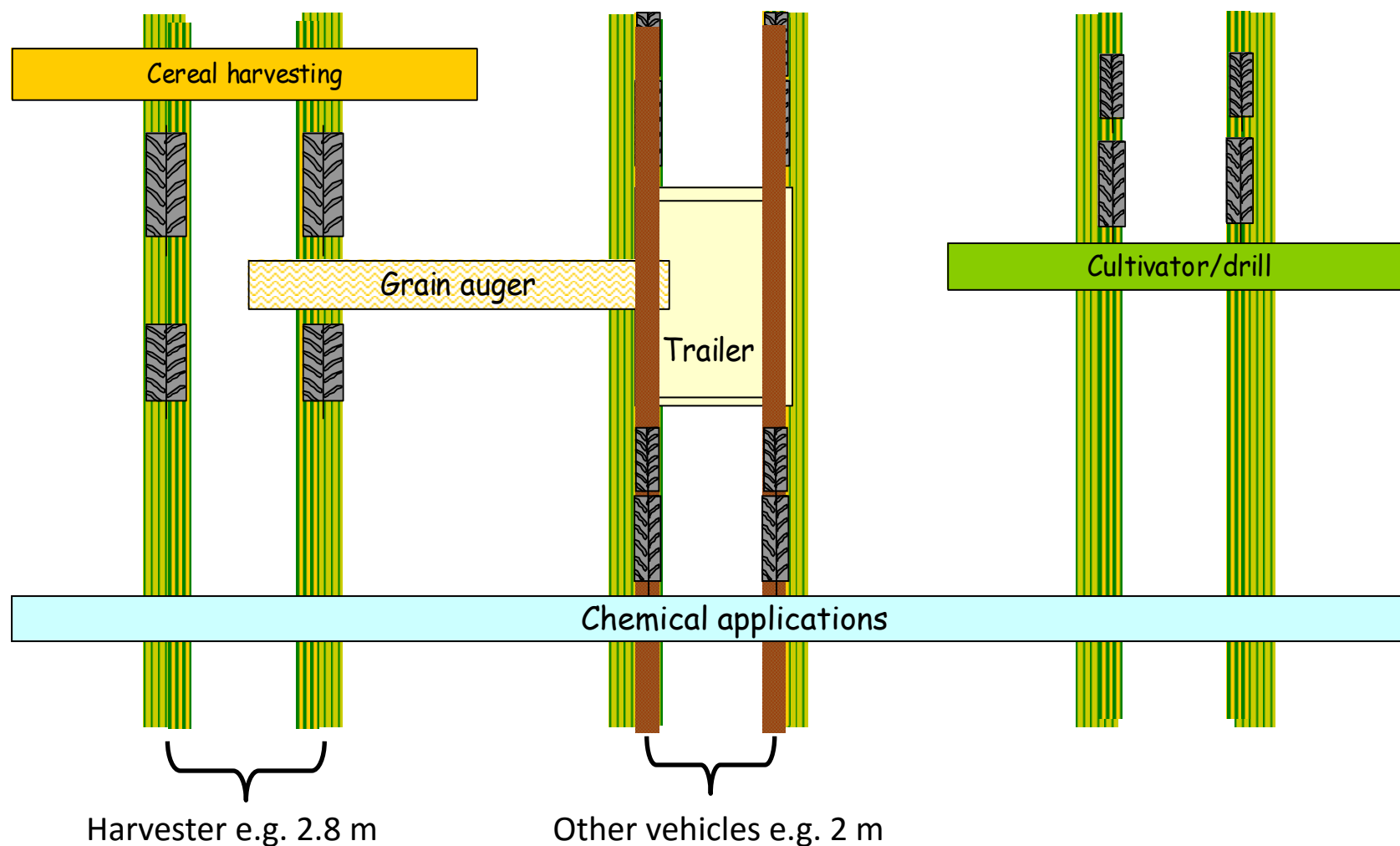
TwinTrac – tractors straddle harvester passes



TwinTrac



“OutTrac” most common CTF design



Step 1

Match sprayer to combine

- Match sprayer to 3 x combine cutting width
 - trailers/chasers always run in tramlines
 - may need to extend combine unloading auger
 - may need to modify sprayer



9.14 m used at 8 m

Next steps towards CTF

- Aim to match new machinery to harvester
 - 10 – 15 cm less than platform width
- Align machinery tracking
 - harvester gauge
 - reduce if you can
 - other machinery gauge
 - extend if you can
 - aim to gain maximum overlap with the harvester tracking



CTF in vegetable production

More gains but greater challenges

- Example
 - System based on 1.83 m (72")
 - Suits onion and potato production
 - All new machines based on 3 x 1.83 m
 - 5.49 m bed former



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 - 5.49 m topper
 - 27.45 m sprayer



CTF in vegetable production

- Maintaining CTF during onion harvesting
 - outrigger wheel hydraulically retractable
 - elevator modified to give greater reach



Potatoes – New Zealand

- A.S. Wilcox & Sons
 - dirt tare on potatoes halved under CTF
 - “controlling traffic is a good thing for our business, from field to pack house”



Photo: LandWise

5 m CTF operation for sweetcorn, broccoli, pumpkins and beans

Photo: Barfoots

4 x 5 m planters with fertiliser and pre-emergent chemical



5 m auto-weeder



Photo: Barfoots

Reduction in tracking with 5 m CTF system for vegetables

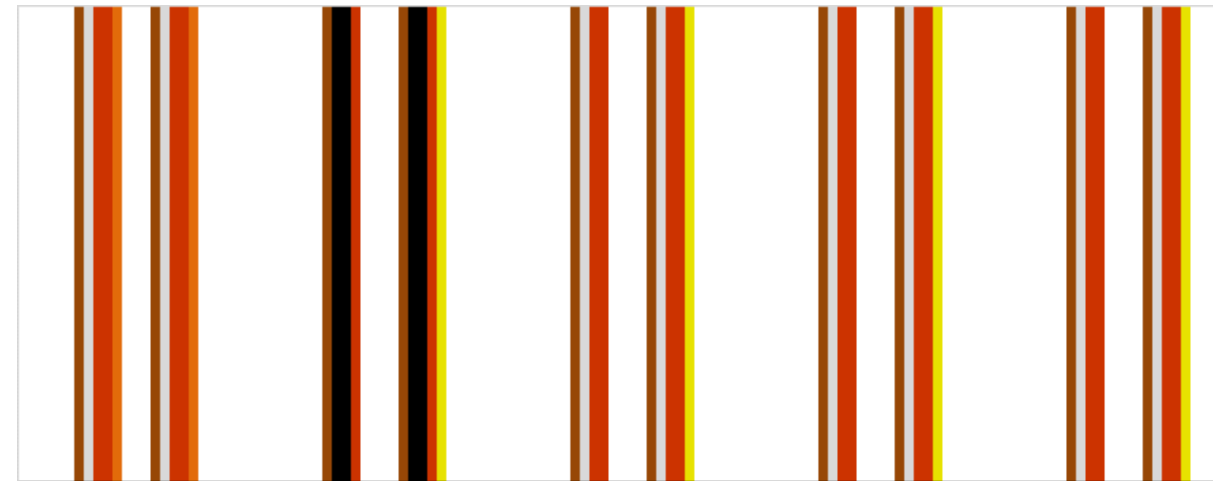


Before CTF

Data	Tracked	Uncropped
Percentage	100.00%	3.17%

90% of land tracked more than 7 times in 4 year rotation

Barfoots



After CTF

Data	Tracked	Uncropped
Percentage	36.51%	3.17%

In summary

- CTF can be achieved at many levels
 - start with the combine – it's probably your heaviest machine
 - familiarise yourself with the different options ([join CTF Europe](#))
 - complete an inventory of the machines you might use
 - check actual dimensions of any machines you plan to buy
 - stick to your normal machinery replacement policy but buy matching widths
 - ensure you have an auto-steer system with an RTK correction

ADDITIONAL



Keith Challen

Operational cost savings on 1000 ha arable

	Costs, £/ha	
	Before CTF	After CTF
Cultivations	34.2	13.2
Drilling	37.9	21.6
Fuel, £/y	19,100	5,495

- Plus:
 - reduction in full and part-time labour
 - more spring cropping

Net saving of £40,000 per annum

Vegetable and root crops

- All these machines have been modified to fit in with CTF systems
 - 3 m axle gauge
 - 3.2 m axle gauge
 - potato harvester axle gauge to 3 m (2 x tractor axle gauge)

