



A clear solution for farmers

CATCHMENT SENSITIVE FARMING

Potato farmer's solve soil erosion

Practical Soil & Water Management from Somerset Farmers

Somerset Levels & Moors Catchment (12)

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Potatoes have been grown in South Somerset for decades but the advent of larger, heavier machinery combined with the number of cultivations and increasing rainfall intensity have caused severe soil compaction leading to runoff and erosion and incidents of mud on the roads. These problems have largely been addressed effectively by the farmers working with both the Parrett Catchment Project, Catchment Sensitive Farming, Branston's Producer Group and Cambridge University farms. This case study deals with preparing the seedbed to avoid compaction and erosion.

Consider the number and type of cultivations required to grow your average supermarket spud:

- Ground preparation in the autumn – subsoil to 13 – 14 inches
- Plough in the spring to 7 – 8 inches
- Create loose ridges with a bedformer (the soil is very loose and susceptible to erosion after this)
- Follow with the bed tiller to create a finer tilth in the ridges whilst maintaining their shape
- Separate out the clods using the clod separator, clods dumped in the furrow
- Plant spuds possibly attaching aqueeel
- Provide extra water detention using tied ridger
- And that is just to get started then irrigation may incur extra passes and soil compaction, sprays for disease management and finally harvesting which again disturbs the soil at depth and leaves the fields compacted by the weight of the harvesting machinery.



Each soil requires a different approach but loosening the soil in the wheelings has been a common objective for Somerset farmers:

Andrew Palmer and James Pullen have developed an effective system for growing potatoes on the silty clay loam soils they farm near Martock. The addition of a tine to the tied ridger below, has improved infiltration behind the dams it creates so helping hold water back in the furrow and getting it to the roots.

Compaction by the small wheels reduces the amount of loose soil available to scrape into a dam so Andrew has welded a tine in front of the dammer which loosens the soil helping to create effective dams and improving infiltration behind them. The aqueeel is used behind the planter to create dimples in the soil which further help to improve infiltration.





This is the field after a storm, the dimples on the ridges have held up well and the dams in this furrow but those on the right have been cut by the development of a meander.

The deep silty soils of South Petherton soil series support potato growing but are very susceptible to erosion. The tied ridger is less effective here than in the heavier soils as the lower clay content makes the dams less robust. The aqueeel is used by some farmers but others have developed a range of solutions.....

Chris Reyland farms the lighter soils and has recently stopped using the de clodder as it made the soil too fine and susceptible to erosion. Last year using a new baseler and adding brackets for hooker tines on the ridging body of the planter made for a more cloddy seedbed that resisted erosion. These tines ripped up the soil in the wheelings behind the planter so improving infiltration.

Using this method reduced the number of passes to only 4.



These adaptations are only part of the picture a host of other aspects have been carefully thought out such as:

- Farmers have increased the gap between rotations to 1 in 6 years
- Cover crops are used in the rotation both for prevention of erosion and to mop up nitrate and improve organic matter content.
- Wider low pressure tyres are used on the tractors
- Buffer strips and field corners have been employed through ELS.

Having addressed the problem at source farmers have also employed a range of solutions to address the pathways using sediment traps, track improvements, and filter fences.

This work has been developed both through the Parrett Catchment Project, CSF and working in partnership with the Branstons producer group.

Articles for their newsletter and the Farmers Weekly have been funded by CSF addressing nutrients, sediment and pesticides.

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Catchment Sensitive Farming (CSF) is delivered in partnership by Natural England, the Environment Agency and Defra.



Department
for Environment
Food & Rural Affairs



Environment
Agency



Funding is from the
European Agricultural
Fund for Rural
Development: Europe
investing in rural areas.