

FWAG South East, Affinity Water and Kings Kent Autumn 2018 Cover Crop demonstration

	Species	% in mix	Sowing rate kilos ha	kg ha	seeds sq m		Approx cost £ ha
EFA Simple	Oats Winter Mustard	80%	20	16	40	Low cost Avoid rape	16
		20%		4	100		
					140		
EFA Super	Baracuda Radish W.Oats Phacelia Vetch	20%	30	6	55	Adds value N .Fix Radish advantage Soil Health	35
		40%		12	30		
		4%		1.2	60		
		36%		10.8	22		
					167		
Early Mix	Black oats Linseed Buckwheat Radish --S . Nova Berseem clover	30%	25	7.5	39	Frost kill? N .Fix Small seeds Multi depth roots Sow Early	30
		20%		5	70		
		25%		6.25	28		
		15%		3.75	34		
		10%		2.5	125		
					296		
Grazing Mix	Rye Vetch	60%	40	24	68	No Brassica Can leave late	34
		40%		16	32		
					100		
N. Catch	Baracuda radish alone	100%	20	20	166	Soil structuring. N . Catch	38
N.Fix	Lupins Vetch Crimson Clover Berseem Clover Peas Oats . Winter	25%	30	7.5	13	soil Health + Max N Fix Non EFA Boosts Soil Fungi No Brassica Deep rooting Lupins	35
		25%		7.5	15		
		3%		0.9	50		
		4%		1.2	60		
		25%		7.5	3		
		18%		5.4	14		
		155					
Bare Stubble							?

Benefits of Cover Crops

In the last 10 years cover cropping has moved from a niche activity on organic farms to becoming widely popular on broad arable areas as the benefits become clear and soil health and vitality become of concern to many growers. There are 5 potential key benefits of cover crops and some farms will experience all 5 while others will see useful value from just 1 or 2 benefits.

- **Suit EFA and /or Environmental stewardship schemes.**
- **Reduce considerably the leaching loss of valuable nutrients from bare soils (especially Nitrogen) improving water quality and saving money.**
- **Improve soil structure, drainage, and soil organic matter levels, which can lead to less cultivation and higher yields.**
- **Reduce soil pests, diseases and weeds.**
- **Improve yields in the following crop and successive crops and offer a grazing opportunity.**

However there is a very wide choice of cover crop species that can be used and a range of cover crop agronomy to these benefits. Consequently it is vital to be clear about the target benefits on any farm /field and careful choices need to be made of cover crop species, variety and agronomy to suit soil type, rotation and the following crop establishment.

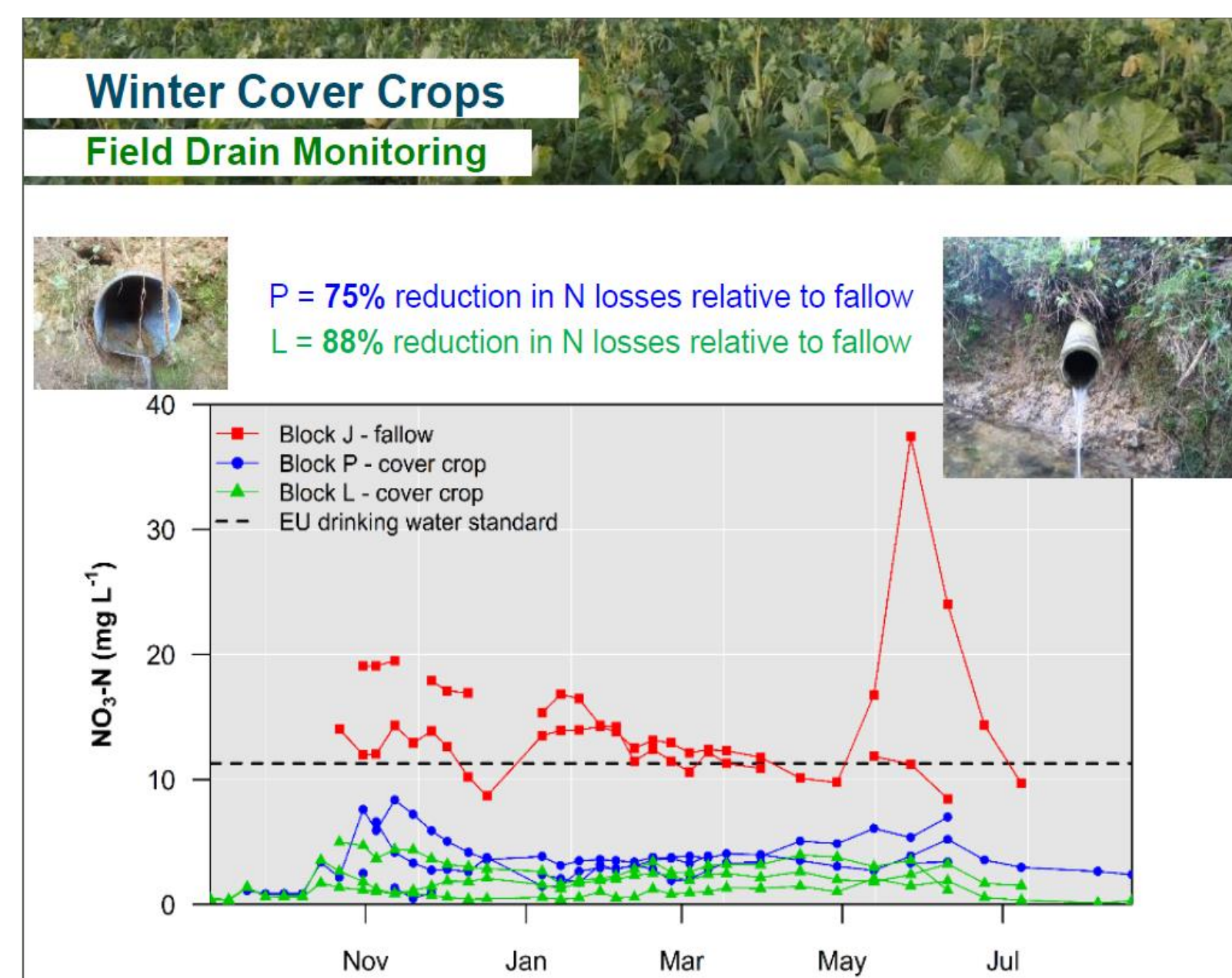
Reduction in Nutrient loss Cover crops can be very successful at reducing nutrients losses from bare soil especially after a cereal crop and Kings Trials show typically a 60% reduction. This can mean substantial improvements in water quality leaving the fields. Any nitrogen left behind after a crop has been paid for so why let it leach form the soil?

Soil structure improvement This is a key long term benefit. It is the cover crop roots that are important and selecting species that have the right combination of deep tap roots and branching side and shallow roots will be beneficial. The biomass produced will add valuable organic matter to the soil which is also important to help soil structure, water holding capacity and feed the soil fauna. Improved soil structure with friable tilth will allow cheaper cultivations, needing less draught and leading possibly to min-till or direct drilling. This cultivation cost savings in a key driver for many growers.

Yield improvements Kings trials and experiences show us that many growers quickly do see yield improvements in the next crop and also in subsequent crops. Growers can often see at least a 0.5 ton /ha extra yield on cereals and 10% extra yield with root crops , depending on the performance of the cover crop. Success with the following crop however will depend on attention to detail in the Cover crop termination (type of destruction and timings) , drill choice, slug and pest monitoring , suitability of the cover crops in that rotation .

DEFRA DTC data , University of East Anglia

8 year project at Salle, Norfolk



Block P – Min till Block L – Direct drill Block J –Bare Fallow-Plough

James Hutton Institute , Dundee

3 year project looking at Cover crops with Spring Barley

Spring barley yield – Concerto 2018

