

Andrew Barr

Andrew Barr farms 480 hectares of mainly arable land near Maidstone in Kent. He is also a member of Weald Granary, a farmer owned grain storage, marketing and distribution co-operative, run by farmers, for farmers.

Andy's philosophy to managing pests, weeds and diseases is to take a whole system approach. He has spent time learning from farmers in Argentina as part of a post-graduate certificate in Agrifood with Nottingham University and his experiences have taught him to work with nature rather than against it and to treat the causes of problems, rather than the symptoms. Andy's practices include direct drilling, use of cover crops, reintroducing livestock and not using insecticides in order to increase biodiversity.



“In order to avoid problems you need to start from the bottom up which means looking at the soil; healthy soils mean healthy plants.”

Andrew is a scratch tillage and direct drilling enthusiast, practices conservation agriculture and is a member of Base-UK. BASE stands for Biology Agriculture Soil & Environment and follows the principles of Conservation Agriculture which is fundamentally about carbon management in soil – based on 3 core principles:

- Minimum soil disturbance
- Residue cover on the soil
- Rotations

Minimum Soil Disturbance

Direct drilling is a system of seed placement where soil is left undisturbed with crop residues on the surface from harvest until sowing. Seeds are delivered in a narrow slot created by discs, coulters or chisels. Direct drilling offers the potential for savings over traditional plough-based crop establishment systems due to lower costs associated with machinery,

energy, soil damage, soil erosion, nitrogen leaching and agrochemical losses. Direct drilling also offers substantial environmental benefits such as increased soil fauna and habitats for birds, as well as a reduced risk of watercourse pollution. The agronomic benefits of optimising the soil potential and the establishment of crop are:

- Increased micro-organism and earthworm activity - the soil structure retains its porosity allowing good root development due to the improved availability of water, air and nutritive elements.
- Improved stability of top soil structure – with the increase in organic top soil matter, the problems associated with capping, leaching and compacting are reduced.
- Soil moisture is better conserved – giving better germination for small seed crops in dry conditions.

- Higher numbers of beneficial arthropods – many insects and other invertebrates carry out some of their life cycle within the soil. Ploughing and cultivating can have damaging effects on their populations. Minimising soil disturbance can help increase numbers of these beneficials.

Since gradually moving over to direct drilling with a Dale drill Andrew has noticed a huge increase in beneficials, especially carabid beetles. He has not used any insecticides on his cereal crops for the last 12 years and finds that most pests are kept under control by the army of beetles, spiders, lacewings, lady birds and hoverflies. He also provides habitats within the field margins for these beneficials to complete their life cycles which has helped build up their numbers. He is frustrated by the lack of focussed R&D in this area – a lot of what he does is experimental. Andy feels that more targeted research into this area and better knowledge exchange would encourage others to take measures to build up beneficial numbers on their farms.

Residue Cover on the Soil – Companion Crops and Cover Crops

A cover crop is a catch-crop grown primarily for the purpose of protecting or improving soils between periods of regular crop production. Andrew has been working closely with his local water company, Southern Water, who see the benefits of cover crops as nutrient scavengers.



Andrew has been growing companion crops with his oilseed rape for the last 7 years. He has tried beans, peas, vetch, crimson clover and berseem clover. The theory behind these companion crops is that volatile oils produced by the plants “confuse” cabbage stem flea beetles and so damage to the oilseed rape plants is reduced. He has found that planting a trap crop such as kale or mustard around the edge of the field before establishing oilseed rape has also worked well as adult

beetles move into the trap crop to feed and lay eggs and tend to stay within the trap crop rather than moving into the oilseed rape. But Andrew admits that research into what plants are best to use as trap crops, establishment techniques and timing is patchy, and growers would need more confidence that this IPM method of CSFB control is effective. Andrew has also used phacelia around the margins of OSR to encourage bee populations.



“It’s for the good of everyone; it is a public good for public money. If farmers were rewarded they would do it.”

ADAS have been carrying out a research project on behalf of AHDB looking at IPM solutions to cabbage stem flea beetle in OSR.

Rotation

Andrew’s rotation is ever changing and much more flexible than in the past, but includes: winter wheat, spring barley, spring beans, oilseed rape, grass leys with lucerne and chicory and cover crops. Grass is grown for seed, forage and as a two year legume mix.

Cover crops vary but include legumes, grasses, cereals, quinoa, buckwheat and brassicas. The aim is to include as many families as possible. Many methods of cover crop destruction have been tried: cross cutter discs, grazing with sheep and the use of herbicides.

“We are all in this together. It’s not farmers versus everyone else. We want to grow crops and we care about the environment.”

POLICY ASKS

- Need for better, more farm focussed research and a mechanism to deliver that research back to farmers
- Discover what research is needed to transition into a new way of sustainable farming.
- Better focussed research – speak to farmers first, then scientists, about what is needed