"TO KEEP PACE WITH POLITICAL, SOCIETAL & ENVIROMENTAL DRIVERS, WE MUST EVOLVE CURRENT FARMING METHODS TO INCREASINGLY REALISE SUSTAINABLE PRODUCTION PRACTICES. IF CAREFULLY CONSIDERED THERE SHOULD BE SCOPE TO IMPROVE YIELDS WHILE NOT ONLY SAFEGUARDING OUR SOILS & NATURAL SYSTEMS, BUT ALSO DERIVING PRODUCTION BENEFITS FROM THEM. CLOVER LIVING MULCHES ARE LIKELY TO BE ONE SUCH EXAMPLE OF THIS."

DR DAVID GEORGE

STC

MANTERRA LIMITED

The European Agricultural Fund for Rural Development:
Europe investing in rural areas

eip-agri
AGRICULTURE & INNOVATION

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RPA 'Living Mulches':

Management of clover living mulch polyculture using precision agriculture technology

stockbridge technology centre

The leading independent centre of excellence in technology transfer to horticulture

THE CHALLENGE

Political, social and environmental forces are driving current food production to become more 'sustainable' with reduced ecological impact. Living mulches have significant potential to realise these aims; creating a natural ecosystem of ground cover which supresses pests, weeds and diseases whilst reducing soil erosion, improving soil organic matter and water holding capacity, and increasing beneficial biodiversity both above and below ground. Leguminous living mulches, such as clover, can also aid soil fertility by making nitrogen available to crops. Realising these benefits is not easy, however, and is dependent on developing cost-effective living mulch production systems that are easy to implement and manage on-farm, and that have minimal impact on yield and crop quality.

THE OPPORTUNITY

Until recently it was hard to imagine how living mulches could be integrated into conventional arable systems, which have evolved to monocultural models. It may be possible, however, to overcome potential problems that living mulches pose through modern machinery and precision agricultural technology. Modern strip-tills, for example, can comfortably cultivate through clover cover, allowing band sowing of crops in GPS-marked seed beds to promote good crop establishment whilst maintaining at least 50% clover cover at drilling. The current three year project is validating this approach in autumn and spring cereals, confirming that crop and clover can be considered compatible, and that the latter can deliver on-farm gains for 'sustainable' aims.

THE SOLUTION

Funded by the Rural Payments Agency under EIP-Agri, commercial-scale trials are being carried out at STC and Hessleskew Farm, with input from Manterra Ltd, to validate commercial viability of clover living mulches to arable systems. To deliver 'gain without pain' from our mulches, the project is utilising the CHAP (Crop Health and Protection) Innovation Centre's Baertschi Oekosem ROTOR Strip Till, a Swiss-made piece of machinery, coupled to GPS-guided drilling. Benefits to soils, crops and biodiversity are being recorded over three consecutive years of growing into clover, and compared to monoculture controls.