

Options for Companion Cropping and Intercropping in the UK

By Andrew Howard



My Family Farm

350ha arable cropping
No-till for 5 years
Crops: wheat, beans, oats, linseed, barley and Peola
11ha Solar Farm



Definition of Intercropping "The growing of two or more crop species where part or all of their crop cycle overlaps temporally and/or spatially, where one or more of the

component species is taken to harvest"

Nothing New in Agriculture!





RES

MÒ





Variety Mixtures







NUFFIELD FARMING SCHOLARSHIPS TRUST **Relay Cropping**





Temporary Intercropping























FAB-Oats

and the second second

THE OWNER AND ADDRESS OF THE OWNER.



FlOats



Triple Harvest







Without Lucerne and 180kg/ha/N - 7.8t/ha



With Lucerne and 100kg/ha/N – 8.0t/ha





Welcome to the OSCAR Living Mulch and Cover Crop Toolbox; providing tools to help improve knowledge and drive the use of Conservation Agriculture practices and subsidiary cropping systems throughout Europe

The aims of the Toolbox are to:

- Make scientific literature and technical information on cover crops and living mulches widely available
- Promote the current knowledge and impact of innovative subsidiary cropping systems and potential solutions to ecological problems

The Toolbox will help you:

- Identify suitable cover crop and living mulch species and varieties and appropriate species mixtures
- Locate and access information on annonriate machinery.





R 1075 -

12.461.0012



Pasture Cropping





















Why Intercrop?



Fewer Weeds





Fewer Insect Pests



<u>Companion crop species</u> <u>Seeding rate (lbs per acre)</u>

Hairy vetch	10
Red clover	1
Chickling vetch	5
Austrian winter peas	5
Iron and clay cowpeas	5
Pearl millet	1
Wildlife grain sorghum	2
Cereal rye	15
Nitro radish	0.3
Rapeseed	0.3
African cabbage	0.3
Broadleaf mustard	0.3
Peredovic sunflower	0.5
Safflower	0.5
Flax	1

Less Disease





More Profit!





Barriers to Uptake



Things to consider before starting Intercropping

- Is there a market for the produce?
- Soil fertility and soil nitrate levels
- Crop rotation
- Field weed pressure
- Choose which intercrop component you want to dominate and which to be the subsidiary
- Drilling depths and crop row widths
- Drilling timings
- Choice of cultivars
- Harvest dates
- Can your intercrops be separated after harvest?



Future direction of research



- Future plant breeding needs to take into account weed competition, adaptive capacity, Nutrient Use Efficiency. Current varieties may simply not be good enough for intercropping.
- There should be farmer owned, run and financed breeding programmes for plants cultivars and Intercrops (Facilitated by Levy board and government)
- Most research on Intercropping in the UK has been carried out in organic farming, more research needed in conventional farming.
- A lot of pesticide applications could technically be illegal with current label restrictions. There is a need to re-design the registration system to include intercrops
- Machinery developed with intercropping in mind
- Benefits of intercropping needs to be demonstrated throughout the supply chain.



AUSTIC | Comme for Train X A DIC 0428 2 - Over Come X D have to take a surgery X = COVERSA

C Sours Https://www.plant-teami.eu

DIVERSITY

DIVERSify: Designing InnoVative plant teams for Ecosystem Resilience and agricultural Sustainability





home	wty?	how?	who?	activities	useful links
	and the second				

" Clean air and water, a diversity of animal and plant species, soil and mineral resources, and predictable weather are annuities that will pay dividends for as long as the human race survives - and may even extend our stay on Earth." - Alex Steffen



\$



Take Home Messages

- Companion cropping and intercropping has the potential to produce up to 30% more crop yield while also allowing for a reduction of off-farm inputs
- To achieve success you need good planning: it is a management and knowledge-intensive approach to farming
- Every farm, soil type and climate will lend itself to different cropping combinations. There is no one blueprint that will suit everyone.
- There are limited opportunities for patenting in intercropping so funding for research will be limited unless supplied by farmers, levy boards and governments.
- The potential for Intercropping and Companion cropping in the UK is HUGE!!





http://www.nuffieldinternational.org/rep_pdf/1474016405Andrew-Howard-report-2015.pdf





Thank you

My Journey



























