Copper, plastic and other contentious inputs – how organic farmers are transitioning away

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Regional Coordinator for Seed Sovereignty Programme
SEED SOVEREIGNTY
Supporting a biodiverse and ecologically sustainable seed system across Britain & Ireland. Because a food revolution starts with seed.

‘Seed Sovereignty reclaims seeds and Biodiversity as commons and public good. The farmer's rights to breed and exchange diverse Open Source Seeds which can be saved and which are not patented, genetically modified, owned or controlled by emerging seed giants’. - Lexicon of Food
Thanks for listening!

Instagram: @trillfarmgarden
@inthepottingshed

www.seedsovereignty.info
Transitioning away from Contentious Inputs

Current Soil Association Standards

To design and manage organic systems which make the best use of natural resources and ecology to prevent the need for external inputs.

Where this fails or where external inputs are required, the use of external inputs is limited to organic, natural or naturally-derived substances.

You must plan your production system to minimise the need for brought-in nutrients.

The design and management of your organic system must rely primarily on organic preventative measures and practices to control and prevent damage caused by pests, diseases and weeds.
Contencious Inputs currently being used on my holding that I would like to reduce

- **Green waste Compost** – Currently used to supplement Green Manures and on farm composting.
- **Ferric Phosphate** – Used to combat slugs.
- **Biological Controls** – Used to combat insect pest.
- **Crop Mesh** – Used to prevent damage from insects and birds.
- **Plastic Mulch** – Used for killing cover crops in reduced tillage areas and for preparing very early ground in market garden, through soil warming and green manure destruction.
- **Polytunnel Plastic** – Season Extension, Winter Production and High Value Summer Production.
- **Plug Trays and Pots.** – Propagation.
- **Drip Tape** – Irrigating crops efficiently.
- **Packaging** – Transferring produce to customer in fresh state.
Ferric Phosphate Slug Pellets

Why?
- Desire to remove external input from system.
- All life in soil has role to play in healthy soil ecosystem.
- Slugs are an important food source for birds, mammals, beetles and other invertebrates and play a key role in the recycling of nutrients and soil generation.
- Without reasonable slug populations there is no food source for their predators and therefore predator populations collapse.

How?
- Whole System Approach
- Beetle Banks, Wild Flower Strips and Trees to encourage predators.
- Well timed and executed Ground Preparation
- Well timed and executed weeding techniques.
- Intelligent Irrigating
Bought in Biological controls

Why?
- Desire to remove external input from system.
- Stable on site populations preferable to constantly importing.
- Prohibitively expensive.

How?
- Whole system approach.
- All year round and variety of undisturbed habitats to support insect predators at all stages of life cycle.
- Increased understanding of pest and predator life cycles, in relation to seasons, temperatures and climate change.
- Allow green manures and harvested crops to flower before cutting or destroying.
Crop Mesh

Why?
- Desire to reduce plastic usage.
- Excludes predators and traps pest species.

How?
- Whole system approach.
- Reduce usage therefore amount needed through more targeted timings.
- Know your enemy and trust in predators.

Pigeons – Threat to young Brassicas early in season, disappear when Combines start working as they feed on spilt grain, return to damage winter crops like Sprout Tops, Late Cauliflowers, Purple Sprouting Broccoli and Kales at first proper cold spell. Plan meshing accordingly.

Cabbage White – Best defence is strong healthy vigorous plants, healthy predator populations nearby and a green understory to confuse egg laying butterflies. Caterpillars worse under mesh, hoovered up quickly by predators when meshes removed.
Green waste Compost

Why reduce?
- Desire to remove external input
- Often contains plastics and other large non-organic foreign objects.
- Low quality compost generally devoid of life due to production method, more conditioner than compost.
- Ghost Acres.

How to reduce?
- Whole system approach.
- Scale up production of composting on site waste materials through investment in facilities and equipment.
- Agroforestry system already planted, consisting of coppice varieties to provide on-site production of ramial woodchip for composting and applying direct to green manures in situ.
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<th>Fertility Build</th>
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**Fruit Trees**

- Pumkkins
- Asparagus
- Brassicas
- Potatoes

**Asparagus and Mixed Trees**

- Asparagus
- Beetroot
- Squash
- Sweetcorn
- Red Onion
- White Onion
- Leeks
- Buckwheat
- Then Fertility

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**Fertility Build**

- Wildflowers
Whole System Approach

**Permanent Beetle Banks** – Permanent undisturbed strips of Tussocky grasses and Wildflowers, provide superb habitat for ground beetles, top predator of slugs and slug eggs. Wildflowers left untouched allow for 12 month habitat for all stages of insect lifecycle to maximise permanent predator insect presence, also insects and seeds attract birds another key slug predator.

**Seasonal Wildflower strips** – Increased seasonal habitat for beneficial insects, big emphasis on habitat for predatory insects right through cropping areas removes need for mesh use on crops for insect control. Allowing Green Manures and old Brassica crops to flower also part of the strategy.

**Trees** – The permanent beetle banks are planted up with trees

**Fruit Trees** – Apple, Pear and Plum reduce bought in fruit and provide insect and bird habitat

**Coppice species** – Alder, Hazel and Willow will be coppiced in sequence with rotation and chipped straight out over the fertility building stage of the rotation, reducing need for any bought infertility such as Green Waste Compost, also will be used to produce composts for propagation and protected cropping areas, reducing inputs further.

**Species for wildlife habitat** – Elder, Spindle and Wild Cherry all attract insects and birds to balance predator and pest populations.

**Efficient Layout** – All cropping areas are matched to the size of crop meshes and Irrigation Boom, this maximises efficient use of time, materials and energy. The layout is designed so young tree crops and wildflower strips are watered at same time as crops to maximise establishment and performance.

**Efficient Irrigation** – Targeted fast efficient irrigation critical to healthy vigorous crops that get away fast and stay healthy, this is best defence against insects and slug losses. Timing of watering can be targeted to reduce slug and fungal risks.
Plastic

**Why?**
- To prevent degrading plastic entering the environment.
- Plastic residues pollute waterways, kill wildlife and pollute the soil.
- Energy hungry to produce and rely on fossil fuel production.

Plastic Mulch – Replace with sustainable alternative, Wool would be my on site produced option

Plastic plug trays and Pots – Increase Blocking, Bare Root Transplants and Direct sowing.

Plastic Drip Tape – Buy better long lasting? Use different methods of Irrigation? Use less and move more often?

Polytunnel Plastic – Difficult!!! Ours last 6 years then disintegrate, used to be recycled but stopped recently,

Plastic Packaging – Sell loose, Bunch not bag, Vending machines.
Who Are You Calling A Contentious Input?

Kate Collyns, Grown Green @ Hartley Farm
Chair of the Organic Growers Alliance (OGA)
Site & Business

- Market garden started spring 2011 on 1.5 acres; now 2 acres inc 4 medium tunnels (6m x 12-15m) & 4 small/prop (3m x 6m)
- Into (official) organic conversion 2019
- Outlets: onsite farm shop & café (45%), other local cafés/box schemes (10%), FarmDrop (45%)
- Range of crops (salad, herbs, leafy veg, coloured toms/beans)
Contentious inputs

“Inputs that you feel in a perfect world organic systems would not rely on”
* Ferramol – pond & time
* Uncertified horse manure – certification
* Bought-in composts – lack of equip/space; bulk mitigate transport/plastic, larger systems
* Fossil fuels (Kubota/BCS/delivery van) – efficiency
* Bought-in/F1 seeds – Seed
War On Plastics?

*On-farm plastic inc fleece, enviromesh & Mypex – reuse, long life, reduction
*Packaging: plastic cabbage bags, Polybags (oxodegradable), Biobags – suitability?
*Swap most punnets for paper bags – carbon footprint of paper?
*EA 2006 study – use paper bags 3 times as much as single-use plastic to be more enviro
*Polytunnel plastic – care, tape, windbreaks?
*Plastic cord & bean netting – reuse, doubled twine?
*Labour & volunteers – 'living/minimum wage' over 25s is £8.21, most likely only rise to £8.67 in 2020; Real Living Wage is £9.30/£10.75
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