

Buckwheat for couch control in the summer of the bastard fallow

In the early spring a group of growers gathered at Abbey Home Farm with a common purpose – to investigate whether they could defeat couch grass in their rotations by growing buckwheat as a cover crop (See OG39). In a twist of fate the early Summer provided perfect conditions for controlling couch through cultivations ('bastard fallowing') and those same conditions proved challenging for establishment of the buckwheat. When the Innovative Farmer field lab group met for a catch-up in October there were a few lessons learnt and experiences to share.

Getting buckwheat established is clearly vital. With buckwheat having a large seed it is probably best drilled rather than broadcasted. But, most growers don't have arable drills and tend to broadcast their green manures. In our trials they were not able to get the buckwheat seed deep enough to get sufficient moisture and avoid predation by birds. Nebraskan agronomist and adviser Daniel Davidson wrote in a blog on No-till Farmer (www.no-tillfarmer.com): "My rule of thumb when broadcasting seed is to add 10-15% more seed when incorporated compared to drilled, and 20-25% more seed when just broadcasted. I've also noticed that broadcasted and incorporated seed will emerge 8-10 days later than drilled seed, while broadcasted seed takes another 8-10 days for emergence."

Another issue which often applies for cover crops is that of irrigation. It is understandable that growers when pressed for time and resources concentrate on the cash crops, but in many ways green manures, fertility-building leys and cover crops are the most important crops in the rotation. Which means that sometimes they need a bit of TLC - such as treating them to a drink!

We discussed the pros and cons of growing buckwheat as a pure stand versus as part of a mixture. Green manures and leys as pure stands can provide a 'way in' for couch grass to get established. The consensus in the group was that it is better to move away from pure clover leys to multi-species mixes are better. For Dom Van Marsh, growing a monocrop of anything goes against his psyche. If he continues with the trials next year then he might trial using buckwheat in a mixture. One grower wasn't so sure - if buckwheat is the 'active ingredient' he wants to maximise its effect, and not dilute it with other species.

Buckwheat can be sown late (see Cotswold seed box), which gives more time to cultivate the ground beforehand. Perhaps a combined approach is needed rather than 'buckwheat v fallowing', it was suggested – you could hammer the ground first with cultivations before sowing the buckwheat. Late sowing of buckwheat allows more time for cultivations and it could be the factor influencing the survival of couch (or not) in the subsequent crop.

It was noted that the growers present had moved away from rotavating to using power-harrows. Andy said he'd changed due to the damage to the soil structure and smearing/panning when the soil is wet. However, ploughing followed by rotavating can be an effective control of couch in the right conditions.

Andy Dibben – Abbey Home Farm

- Had three treatments, sown in late May:
 1. Pure buckwheat stand – was topped due to fat hen
 2. Buckwheat with white clover/trefoil – mown and treated as clover
 3. Bastard fallow control
- Would have liked to have had the trial drilled by a contractor but it wasn't possible, so broadcast (70kg/ha), as he usually does green manures. However, germination/establishment was really poor and very little buckwheat emerged, so plots were managed as if no buckwheat.
- Not really possible to compare plots for efficacy of treatment due to lack of buckwheat.

Ed Sweetman – Purton House Organic

- Mid-May sowed two areas with buckwheat, broadcast and Cambridge-rolled – mowed off by late August/early September. Was too wet to plough in, so was left as a dead mulch. One plot had a very bad potato volunteer weed issue. Now has sown a rye/vetch mix over all plots.
- Didn't have the equipment to do a bastard fallow. Not much machinery available, so stopped bastard fallowing.
- Couch grew very well!
- Ed felt that as it was his first year growing he hadn't really got to know the ground well enough and might do the trial differently with a bit more knowledge of his fields.

Dom Van Marsh (Canalside)

- Didn't manage a control (pressure of space).
- Ploughed 16th May. Didn't plough well due to dry weather. Sowed 17/5 just before some good rain. Problems with drill so broadcasted it. Still patchy germination, however. Had a three-way battle between the couch, redshank and



Buckwheat at Purton House, just before mowing 17/9/17

Photo: Ed Sweetman

buckwheat for supremacy. It was all mown down and sowed with Westerwolds (ryegrass) at the end of September. There still seems to be a lot of couch in the plot.

- One strip was double-seeded (140kg/ha!) accidentally. That strip did a lot better with very little weed underneath.
- Could there be a problem with lack of N? The plot chosen was at the end of the rotation after four years of cropping.

Mark Stay (North Aston Organic)

- Plot was 12m by 25m , divided into two. Sampled on 17th June. Plot A (control) showed 7.7% coverage and Plot B 12.8%
- The plots were then spring tine harrowed on 17th June and sown on 26th June: Plot A with Cotswold Seeds standard Summer Quick Fix (SQF) and Plot B with SQF but with mustard replaced by buckwheat. Irrigated with about 12mm water.
- Subsequent observations are that buckwheat coverage was inadequate allowing some weeds to get away (mainly Fat Hen and Annual Nettle). When the crop was flailed on 7th September and the residue had died off there was much less weed on plot B (despite previous comment.)

Matt Dale (also North Aston Organic)

- Also tried the SQF with mustard compared to with buckwheat on a larger field plot. Similar experience as Mark Stay with buckwheat very thin.

Phil Sumption

Want to get involved? Contact Phil Sumption: phil.s@organicresearchcentre.com



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Buckwheat as a nurse crop at Honeydale Farm

We have been sowing buckwheat in various mixes and with different methods of sowing over the last three years. We are using buckwheat as part of our rotation to unlock phosphate as it can become unavailable on our high pH soils. Our most successful establishments have been in warm soils and long days and we often sow in late June or July. It grows when broadcast but we prefer to drill it as we use buckwheat as a 'nurse' crop for establishing herbal leys. We drill first at about an inch deep with an Aitchison tined drill and then broadcast the herbal ley seed mix over the top and roll in.

The most important thing that we have been looking at is how much seed we need to sow in order to provide a balance between enough and too much. We don't want to smother our leys but we do want to protect the new ley seedlings from hot weather when it comes. The buckwheat shades the young ley. We started at 20 kg per acre and have reduced down to 10 kilos per acre. For such a small amount of seed I think that you'll agree that it's done very well!

Once the buckwheat has flowered we top it with the flail and we leave patches and graze with sheep to see the effect on establishment of the ley.



PS I know that its not strictly crop related but the buckwheat area is always packed with farmland birds and bees!

Ian Wilkinson, Cotswold Seeds

Cotswold Seeds provided the buckwheat seed for this years trials.

www.cotswoldseeds.com

Photos: Cotswolds Seeds