

Pulses pivotal in cultivation plan

The battle against blackgrass and a move to controlled traffic farming on a Northants estate have seen peas and beans introduced as an integral part of the solution. CPM visits to gain an insight.

By Tom Allen-Stevens

As you pass down the long, tree-lined drive, through parkland studded with mature oaks and a celebrated arboretum, there's everything to suggest Courteenhall in Northants is a traditional, family-owned estate, complete with a beautiful Georgian manor, thriving shoot and various commercial enterprises.

But the farming itself is anything but traditional. Roll up to the farm buildings and

there's a colossal 12m Horsch Sprinter drill crouching next to a Horsch Joker cultivator of matching width, and these denote the cornerstone of Courteenhall's new farming system. "We're confining trafficking to set runways," explains farm manager Tom Banks.

"We're moving away from deep recreational cultivations

which sometimes are only necessary to alleviate compaction caused by random traffic — there'll be a lot less burning diesel and wearing metal in the future."

It's a change he's been bringing in since he arrived as farm manager just two years ago. With 850ha farmed in hand and 284ha contract farmed — most of it on heavy Hanslope clay — it brings with it some hefty challenges. "There's massive blackgrass pressure, much of which is herbicide resistant, linked to land with poor or obsolete drainage," he says.

Along with a change in cultivations, there's also a change in the rotation. "The old wheat/oilseed rape rotation wasn't sustainable, and at 3-3.5t/ha, the OSR yields weren't where they should be. So we've changed to a four-year rotation, bringing peas in on lighter soils and putting spring beans into the heavier ground. It means we've a spring crop to help with blackgrass

and a better rotation — the pea or bean crop leaves the soil with a lovely friable structure and gives us the opportunity to use different chemistry against blackgrass."

This autumn saw the first

“The pea or bean crop leaves the soil with a lovely friable structure.”





Tom Banks prefers peas because he enjoys the challenge of producing a quality product, and they leave a cleaner seedbed – this lot fetched £360/t.

crops established with the new two-pass system — Joker followed by Sprinter, or just the Sprinter for the OSR, guided on their set pathways by an RTK base station purchased last year. This puts a signal through to John Deere Greenstar auto-guidance systems on the mainline tractors.

Epecially fragile

But he admits he's not quite there with the spring crops. "Peas are especially fragile and don't cope well with compaction. So currently we're putting the 6m Väderstad TopDown through in early Oct, occasionally followed by a light pass with the Joker or spring tines in mid-Feb to mid-March. This depends on the tilth and levelness of the seed beds — whenever it's dry enough to travel. In time, though, I'm hoping we can rely on cover crops with their strong rooting as our replacement for the TopDown."

He's trying 25ha in front of the pulse crops this year. "Before beans, there's some straight oil radish, while we've a mixture that includes oil radish, tillage radish, black oats, rye, phacelia and berseem clover on the pea land.

"This should add organic matter and capture nutrients, resulting in less soil run-off and capping. But crucially it'll improve the tilth, and should mean we can just direct drill once the green cover has been desiccated." The plan is to try

grazing the cover crop off with store lambs that currently occupy the estate's parkland.

The 2014 pea area was drilled with Sakura marrowfats on a buy-back contract through Frontier. "I like peas because I enjoy the challenge of producing a quality product. It starts with the establishment — we drilled as soon as conditions were right at 65 seeds/m². Blue and feed peas can be established with lower seed rates, but not with marrowfats as they don't stand or pod as well."

The next crop will receive a 15kg/ha dose of phosphate under the seed with the drill "to promote early root development and replace crop take-off", despite soil indices being relatively high from regular dressings of biosolids. "Rolling is essential — there was a pre-emergence herbicide for blackgrass, and an early post-em treatment for broadleaf weeds."

The peas come dressed with Wakil XL (cymoxanil+ fludioxonil+ metalaxyl-M) for downy mildew. Pea and bean weevil and aphids can be a concern early on especially on cloddy seedbeds in colder conditions when the crop isn't actively growing away. "There aren't many peas grown in Northants, and this is virgin pea land, so downy mildew is less of a problem. Pea moth later on is more of a worry, especially as this crop goes for human consumption. Although there's ▶

The 12m Horsch Sprinter drill is part of a move towards controlled traffic farming for Courteenhall.



Spray it again, Sam

Sprayer workloads have been compounded by the need to keep on top of flea beetle in rape as well as utilising that more robust herbicide programme to combat grass weeds in cereals and so the sprayer is working harder than ever.

The knock-on effect is that the machine needs more maintenance but, at the same time, there is less time to carry this out. However, with a window between spray programmes now ahead of us, this may be a good time to give the sprayer a little TLC before putting it away for the winter.

The annual NSTS test has ensured that once a year the sprayer is brought up to scratch by a thorough MOT, but a big proportion still fail through simple issues that should be taken care of immediately, such as replacing PTO guards and curing leaks and drips. With the sprayer operator normally present for the NSTS test, especially if they are in need of a couple of NRoSO points, they are fully aware of what is needed to keep the sprayer in tip-top shape and so let's use that routine as part of our regular maintenance schedule.

Visual examination - walking round the machine will tell us the general condition the sprayer is in; is the mounting of the sprayer to the tractor sound and all hoses and pipes in good order. Is the tank mounting and chassis in good nick? The boom should be straight and level with all the nozzle bodies lined up nicely. Does the yaw, roll and bounce damping work and check out those break backs on the boom at the same time.

Pump and valve system – are the filters clean and the system leak-free;

and not just at spraying pressure but also when cranked up to near relief valve pressure? Is the relief valve operating and how is the induction bowl function – are the can wash and rinse ring doing their job?

Boom spray line - again check the boom for leaks at both normal and high pressure and make sure the anti-drips are doing their job. A look along the boom whilst the nozzles are running will show up any imperfections in the spray pattern from each nozzle. Check out that the section shut-offs all function crisply.

Calibration - how is the hectare meter working out in the field? If the area clocked is wrong to the field size then the application rate will be wrong on the sprayer so it is imperative that the forward speed reading on the in-cab spray computer is correct to get the area right. With the area correctly clocking, then we can check out nozzle outputs with the jug - they should also be uniform in throughput across the boom from section to section. With the machine spraying against a simulated speed, the nozzle output needs to match the desired application rate in litres/min. If not then the flow meter may need calibrating or the pressure-regulation system tweaking. Here, it is also possible to check that the sprayer output remains constant as the section shut-offs are closed down to make sure the sprayer is not over or under-applying in short work around the headland.

So with everything now shipshape, get the sprayer frost-protected by whatever method that suits to make sure the spring spraying season gets off to a smooth start so that you can look after every acre.



AMAZONE



There's massive blackgrass pressure, much of which is herbicide resistant, linked to land with poor or obsolete drainage.

▶ less pressure than in the eastern counties, the crop was treated twice with pirimicarb.”

These were tank-mixed with Alto Elite (chlorothalonil+ cyproconazole) and applied in early to mid-June. “There was a little mildew about then, and it protects against botrytis, although it was a kind spring this year,” recalls Tom Banks. Manganese was also applied at pod set to guard against marsh spot.

“Harvest came in the first week of Aug. We tend to combine early to capture the colour the processors require, then condition and dry on floor, handling the crop as little as possible. We desiccated when the peas were rubbery and unable to split between your fingers, then harvested 7-10 days later.”

The result was a yield of 4.1t/ha. “We were hoping for nearer 5t/ha, but I think the hot days in late May stressed the crop when

it was in mid flower. However, it was a big, bold sample — our contract was a minimum £320/t and we managed £360/t, so it's done well financially.”

Different approach

There's a different approach for the bean crop, he continues. “We tried two establishment procedures in 2014 — some ground got the TopDown after pulling through a Flatlift in Aug, while the rest was direct drilled. In the end, the direct-drilled crop yielded 0.5t/ha more, and appeared to have less pressure from weeds. What's more, after taking a spade out and digging around prior to cultivations, there appeared to be no difference in the soil structure.

“With beans, my thoughts are the sooner you can get them in the ground, the better, which works against blackgrass control. We could travel earlier on the direct-drilled land, and established the crop in the third week of March, with the rest drilled about a week later.

Currently the TopDown is pulled through in the autumn, followed by a light cultivation in spring.



“For the 2015 crop, we've just tickled the surface with the Joker to encourage a weed flush which we'll then drill straight into after glyphosate. If we're able to drill early, a game of Roundup Roulette may make up part of our pre-em weed control program — in other words, drill the crop deep and apply glyphosate before it emerges. We tried that with one field this year and had better results than the pre-em alone.”

Avadex (trilalate) was applied to the worst blackgrass fields, along with Defy (prosofocarb) and Nirvana (imazamox+ pendimethalin). “We drilled at 45 seeds/m² — Fanfare for its higher yield and premium

Marrowfat peas and spring beans: how the finances stack up

	Spring Beans (/ha)	Peas (/ha)
Seed	£120	£184
Adjuvants	£4	£8
Fungicides	£13	£27
Herbicides	£50	£97
Insecticides	£10	£24
Trace Elements	£2	£8
Variable costs	£199	£348
Yield (t/ha)	4.8	4.1
Price (£/t)	£220	£360
Output	£1056	£1476
Gross Margin	£857	£1128

Pulse quickens for UK growers

Prices for pulses will remain buoyant, despite an anticipated 30% increase in the UK area set to be planted with peas and beans next year, according to Andy Bury, current president of the British Edible Pulses Association (BEPA).

The option to put the crops on land included within the 5% Ecological Focus Area (EFA) requirement is set to result in an increased area of peas and beans. This comes at a time when growers are moving into spring crops to battle blackgrass and away from oilseed rape, as prices for rapeseed fall. “But pulse prices for Nov 2015 are still trading above £35/t over wheat. Conversely in 2010, the premium was as low as just £10/t,” he points out.

He reckons the UK production of combinable peas will remain around the same at 100,000t, but field beans are set to rise from 410,000t at harvest 2014 to 560,000t from next year's crop.

“Half of the bean crop goes for human consumption, and 90% of that goes to Egypt.

This market is seeing a year-on-year rise in demand and is supplied only by France, Australia and the UK,” he explains.

“But a combination of spraying restrictions and quality issues in France means their area is likely to reduce, offering opportunities for UK growers who produce for the quality market.”

Demand for beans from feed compounders, in the UK and in Spain and Italy, is likely to return, he adds, and lower feed bean prices are likely to generate extra demand from the UK aquaculture market, that currently stands at around 30,000t.

“In 2009, there was a UK bean harvest of over 680,000t, so the 2015 crop is by no means scary stuff. The Egyptians are already looking to buy new crop beans, and the premium is good, so do something about it,” he advises.

The market for large blue peas, making up 70% of the combinable pea crop, is poor, he reports. “It's difficult to see that prices will climb above £200/t, while the price for feed peas is



There are opportunities in field beans for UK growers who produce for the quality market, says Andy Bury.

just £170/t. Marrowfat peas are really sought-after at £340/t, so do the job properly and you can double your output,” he maintains.

Frontier is the largest trader of pulses in the UK and the biggest exporter to Egypt adds Andy Bury, who is also the company's UK pulse manager. “We concentrate more on beans, and we're the only company that does, which means we can offer a bit of flexibility on the spec,” he says.

Fury dies down with Fanfare and Vertigo at the top

Spring bean varieties Fanfare and Vertigo, from breeder LSPB, have gained full status at the top of the PGRO 2015 Recommended List. "I think it's quite likely we'll see the new ones from LSPB favoured over stable mate Fury," points out Steve Belcher of PGRO.

"Vertigo is the highest-yielding variety. Standing isn't its best point, but that's not a huge consideration. Fanfare yields a little behind Vertigo with a maturity similar to Fuego and

straw length and standing similar to Fury."

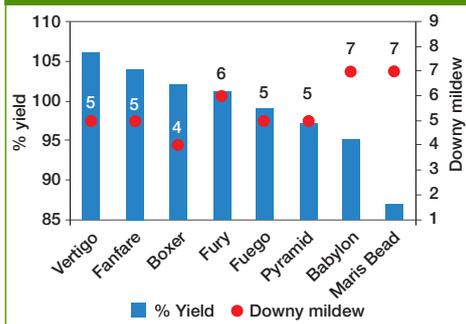
Thor and Saracen, from Limagrain, are two new additions to the winter bean list with a first year (P1) provisional recommendation. "These pale hilum types yield higher than Wizard, but not as well as list leader Tundra. Both newcomers have stiff straw, but Wizard is still top in terms of seed size."

The pea list sees one addition — LSPB's large blue type Bluetooth gets P1 recommendation for

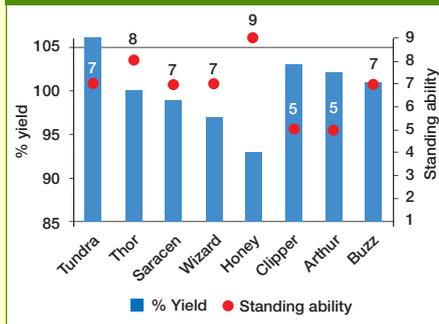
2015. "It yields just behind the best large blue, Prophet, with a similar straw length and a slightly smaller thousand seed weight."

A decision on marrowfat variety Bibao has been deferred, giving it a P3 recommendation, while large blue Campus moves up to P2 recommendation. "Campus looks very strong," comments Steve Belcher.

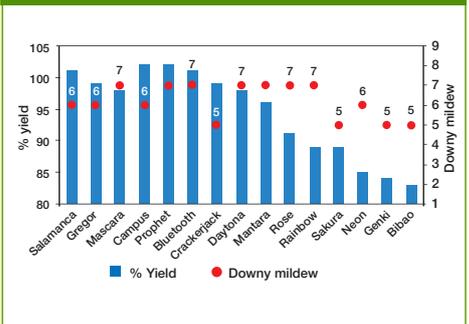
RL Spring Beans 2015



RL Winter Beans 2015



RL Peas 2015



market. This time I'm planning to raise the seed rate to around 60 seeds/m², again to suppress the blackgrass — beans aren't the best at providing ground cover and competition."

With no seed dressing being used, cypermethrin was applied early on for pea and bean weevil, while two doses of lambda-cyhalothrin went on at the beginning and end of June for bruchid beetle control — essential for the human consumption market, says Tom Banks.

"We applied Alto Elite in early June for downy mildew and added Amistar (azoxystrobin) to push the crop on a bit. There's always the danger it'll keep the crop greener for longer when you want to harvest, but you get more yield, and the crop warranted it."

The beans were desiccated at the end of Aug with diquat. "In hindsight, we should've used glyphosate as that's better at clearing

Care is taken to ensure a good-looking, bruchid-free bean sample that goes for human consumption.

up the rubbish in the bottom of the crop. Harvest followed three weeks later due to unsettled weather, with a yield of 4.8t and a lovely clean sample.

"The important thing with beans is to get them in before they stain, then you have to let them settle down in store, blowing air through as necessary — I'm always wary that a crop will spoil before Christmas." Unlike the peas, the beans weren't on a buy-back contract, but managed an average price of £220/t.

Of the two crops, he prefers peas. "You get a cleaner seedbed following the crop because of slightly later drilling, so there's the opportunity to get an extra flush of blackgrass, and a denser crop. It's generally also more reliable on quality and yield than beans. But peas wouldn't be suited to our heavier land.

"However, either crop makes a great entry for the following wheat — you get an N fix as an added bonus that encourages early rooting and pushes the crop on in the autumn. This helps backward crops where you've delayed planting, and means you can hold back on that early first dose of N in the spring.

"Peas and beans are now an essential part of our rotation, and will become more valuable if we can make the cover crops work for us," concludes Tom Banks. ■



Different cover crops are being tried, with the plan to rely on their strong rooting to build structure and replace an autumn cultivation.



Farm Facts

Courteenhall Estate, near Northampton

- **Area farmed:** 850ha in hand plus 284ha of contract farming
- **Staff:** Two full time plus Tom Banks
- **Soil type:** Mainly Hanslope clay, with some brash and a little sandy loam.
- **Cropping:** Winter wheat (560ha), winter oilseed rape (255ha), peas (135ha), spring beans (100ha), winter barley (15ha), grass ley (44ha), extended stubble/fallow (25ha)
- **Mainline Tractors:** Challenger 855, John Deere 7530, 8400
- **Combine harvester:** Claas Lexion 570 with 9m header (to be replaced in 2015)
- **Sprayer:** Bateman self-propelled with 24m boom and 3000-litre tank
- **Drill:** 12m Horsch Sprinter
- **Cultivation:** 12m Horsch Joker, 6m Väderstad TopDown
- **Rolls:** 12m HEVA King-Rolls
- **Spreader:** KRM M2W with 3t hopper