

PORTSMOUTH WATER NITRATE INTERVENTION PAYMENT FOR ECOSYSTEM SERVICES (PES) SCHEME HANDBOOK



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INTRODUCTION AND CONTACT INFORMATION

Portsmouth Water is undertaking catchment management in response to a need to tackle rising nitrate levels affecting groundwater abstracted for public water supply and excessive nutrient loading into surface and coastal waters.

Portsmouth Water Nitrate Intervention Payment for Ecosystem Services (PES) scheme will directly assist farmers (and other land managers) in high sensitive catchment areas to deliver measures that aim to reduce nitrate leaching and improve farming efficiency.

This handbook details the current PES incentive measures available under the scheme. Farmers and land managers who wish to check their eligibility for any of the measures should contact PW Catchment Team in the first instance. Funding for additional incentive measures will be available following feasibility and further research.

The Scheme will run until March 2025 where funding will be reviewed, grant payments can only be paid up until March 2025 until additional funding has been approved. Grants are capped at £10k per year per holding as agreed with Portsmouth Water.

CONTACT DETAILS FOR PORTSMOUTH WATER

Portsmouth Water's Catchment and Environment Department

 **catchment.management@portsmouthwater.co.uk**

 **023 9224 9248 / 07872 108992**
(Portsmouth Water's Catchment Management Officer)

 **Portsmouth Water Ltd**
Catchment and Environment Department
PO Box 8
West Street
Havant
Hampshire
PO9 1LG

PES OPTIONS AND PAYMENT RATES

MEASURE NUMBER AND DESCRIPTION	PAYMENT RATE	PAGE
1 Cover crop followed by fallow	£360/Ha	5
2 Low nitrogen input to improved grassland	£250/Ha/YR	6
3 Autumn/winter cover crops (tiered destruction)	£60/Ha/YR - £80/Ha/YR	7
4 Arable reversion on karst feature risk fields	£400/Ha/YR	8
5 Undersown crops	£200/Ha/YR	9
6 Early grass after maize harvest	£110/Ha/YR	10
7 Nitrogen testing and specialist advice	100% of agreed total	11
8 Variable Nitrogen Service (N mapping) - High risk	100% of agreed total	12
9 Variable Nitrogen Service (N mapping) - Medium & Low risk	100% of agreed total (up to 150 Ha)	13
10 Nutrient Management Plan	100% of agreed total	14

MEASURE 1

COVER CROP FOLLOWED BY FALLOW

£360/Ha

GENERAL SPECIFICATIONS

- Cover crop drilled in the autumn (established by 15th September), retained or land left fallow from 15th February until the end of the minimum fallow period (15th July).
- Type of cover crop is flexible; Legumes such as clover can be in the cover crop mix if it is grown alongside another cover crop (e.g. oats, mustard) to a maximum proportion of 35%.
- Fallow can be managed for biodiversity target species.
- If suitable the cover can be cut for forage in the spring or summer.
- No artificial fertiliser inputs and/or manure/digestate/muck spreading unless prior written agreement is made with Portsmouth Water.
- Use of graminicides permitted.
- Measure to be implemented on an individual field on a one-off basis – could rotate through high risk fields, implementing 1 year in 5.

TARGETING (where funding will be offered)

- Measure will be available to high risk holdings, please refer to Portsmouth Water Risk Map (Appendix 1).

BENEFITS

- ✓ **Water Quality**
Reduced nitrate leaching over winter due to cover cropping and no/less N being applied during fallow period, therefore reduced nitrate leaching to groundwater.
- ✓ **Biodiversity**
Potential benefits for uncommon arable plants and farmland birds.
- ✓ **Soil Health**
Fallow for one season, soil recovery and increased organic matter.
- ✓ **Pest control**
Opportunity to help control weeds (black grass, sterile brome).
- ✓ **Financial**
Savings in fertiliser costs and some operational costs.

MEASURE 2

LOW NITROGEN INPUT TO IMPROVED GRASSLAND

£250/Ha/YR

GENERAL SPECIFICATIONS

- Eligible on improved grassland fields, where applications of nitrogen have exceeded 100kg N/ha/year in at least two out of the previous three years.
- No or very low nitrogen inputs (artificial fertilisers or organic manures) to be applied from the date of your authorised agreement in consultation with Portsmouth Water.
- Only apply minimal amounts of manure and fertiliser according to pre-calculated spreading values. This will be limited to either 12 tonnes of well-rotted farmyard manure per ha per year or up to 50kg of nitrogen per ha per year in accordance with a nutrient plan.
- Grazing allowed but only at a low intensity to ensure a dense grass sward is maintained.

TARGETING (where funding will be offered)

- Measure will be available to high risk holdings, please refer to Portsmouth Water Risk Map (Appendix 1).

BENEFITS

- ✓ **Water Quality**
Reduced nitrate leaching over winter due to no cropping and no/less N being applied during fallow period, therefore reduced nitrate leaching to groundwater.
- ✓ **Financial**
Savings in fertiliser costs and some operational costs.

MEASURE 3

AUTUMN/WINTER COVER CROPS (TIERED DESTRUCTION)

£60/Ha/YR - £80/Ha/YR

GENERAL SPECIFICATIONS

- Over Autumn/Winter cover crop prior to spring drilling to be established by 15th September and retain cover until 15th January at the earliest.
- Type of cover crop is flexible; Legumes such as clover can be in the cover crop mix if it is grown alongside another cover crop (e.g. oats, mustard) to a maximum proportion of 30%.
- Forage crop allowed.
- No artificial fertiliser inputs and/or manure/digestate/muck spreading on cover crops.
- Destruction from 15th of chosen destruction month by either: Low intensity grazing, mechanical means or Glyphosate application (not before, during or following heavy rainfall) and no more than 6 weeks before drilling the following crop.
- Flexibility with tiered destruction dates: the 15th of chosen destruction month January £60/Ha; February £70/Ha; March £80/Ha; onwards. Earlier destruction may be accepted please discuss this with Portsmouth Water's Catchment Officer.

TARGETING (where funding will be offered)

- Measure will be available to high risk holdings, please refer to Portsmouth Water Risk Map (Appendix 1).

BENEFITS

- ✓ **Water Quality**
Providing winter cover and nitrate soak up - reduces winter nitrate leaching to groundwater. Reduced levels of soil erosion and gullyng.
- ✓ **Biodiversity**
Winter cover for wildlife.
- ✓ **Soil Health**
Soil recovery over winter.
- ✓ **Financial**
Cover crop seed funding, free soil testing and results.

MEASURE 4

ARABLE REVERSION ON KARST FEATURE RISK FIELDS

£400/Ha/YR

GENERAL SPECIFICATIONS

- Arable reversion to grassland on specific fields thought to be at high risk of karstic 'fast pathways' to groundwater.
- Field must have been used for arable cultivation within the last two years.
- Reversion of whole field(s) to grassland. Option to divide very large fields if karstic features concentrated in one area (to be negotiated on a case by case basis).
- Grass sward to be drilled/sown by 15th September of the start agreement year.
- Sward composition flexible and to be agreed with a qualified crop adviser on a case by case basis, but ideally should include a mix of grasses, herbs and legumes. Legumes may be included to a maximum proportion of 30% (by seed proportion).
- Seed rate must be sufficient to establish a dense sward.
- Maintain grass sward for at least 4 years with rolling annual review.
- No application of N allowed unless prior agreement is made with PW.

- Grass can be cut or topped and is encouraged regularly during the growing season in the first 12 months after establishment and to be topped throughout the agreement as appropriate.
- Light grazing by sheep only is permitted.
- At the end of the ley period, if grass is to be destroyed and replaced, cultivation is not to be undertaken more than 6 weeks before the following crop is sown/drilled.

TARGETING (where funding will be offered)

- Measure will be available to high risk holdings, please refer to Portsmouth Water Risk Map (Appendix 1) and only to a few particular fields with high karstic risk, on a case-by-case basis.

BENEFITS

- ✓ **Water Quality**
Less fertiliser applied.
- ✓ **Biodiversity**
Habitat/food for birds, arable plants, insects.
- ✓ **Financial**
Save on N fertiliser costs and reduced operational burden/costs.

MEASURE 5

UNDERSOWN CROPS

£200/Ha/YR

GENERAL SPECIFICATIONS

- Undersown crops with grass or a mix of grass and legumes and/or herbs. Legumes used to a maximum proportion of 50% to ensure the grasses and herbs can utilise the N fixed by the legumes.
- For undersowing maize establish a fast-growing grass cover crop between rows of maize by 10th July to provide dense groundcover over Autumn/winter.
- Retain undersown cover until at least 15th January if the following crop is combinable and until at least 1st March if the following crop is maize. Once destroyed, aim to establish the following spring crop within 6 weeks.
- Herbicide usage allowed provided it is authorised by a qualified agronomist.
- N input allowed to establish cash crop, but no N to be applied to undersown mix during the autumn and winter period unless prior agreement is made with PW.
- Estimates of the nutrients released by the cover crop should be used in nutrient planning for the following crop to ensure there is no over application or excess availability of nutrients, which may subsequently leach or runoff.

TARGETING (where funding will be offered)

- Measure will be available to high risk holdings, please refer to Portsmouth Water Risk Map (Appendix 1).

BENEFITS

- ✓ **Water Quality**
Reduces nitrate leaching due to greater uptake by plants, and longer duration of cover. Reduces soil erosion. May reduce need for herbicide usage.
- ✓ **Biodiversity**
Winter cover for wildlife and summer food for priority farmland bird species.
- ✓ **Soil Health**
Builds soil fertility.
- ✓ **Pest control**
May suppress weeds.
- ✓ **Financial**
Undersowing mix funding, free soil testing and results.

MEASURE 6

EARLY GRASS AFTER MAIZE HARVEST

£110/Ha/YR

GENERAL SPECIFICATIONS

- Establish a fast-growing cover crop within 2 weeks of harvesting (no later than 15th October) & retain cover crop until 1st March.
- Cover crop should be suitable for autumn sowing, fast growing, and frost tolerant to provide adequate cover over winter.
- Type of cover crop is flexible. The main species should be Italian ryegrass, Westerwolds, rye, barley or oats. The minimum seed rate used for grasses should be 35kg/ha and for cereals 100kg/ha.
- The cover crop end use can be used for silage or grazed.
- Estimates of the nutrients released by the cover crop should be used in nutrient planning for the following crop to ensure there is no over application or excess availability of nutrients, which may subsequently leach or runoff. Nutrients should only be used in line with crop requirements.
- Flexibility for later grass establishment but at reduced payment rate (default option if cannot establish cover by mid-October) as agreed with PW Catchment Officer.

TARGETING (where funding will be offered)

- Measure will be available to high risk holdings, please refer to Portsmouth Water Risk Map (Appendix 1).

BENEFITS

- ✓ **Water Quality**
Providing winter cover and nitrate soak up - reduces winter nitrate leaching to groundwater. Reduced levels of soil erosion and gullyng.
- ✓ **Biodiversity**
Winter cover for wildlife.
- ✓ **Soil Health**
Soil recovery over winter.

MEASURE 7

NITROGEN TESTING AND SPECIALIST ADVICE

Support for testing, analysis and advice for effective nitrogen applications

100% OF AGREED TOTAL

GENERAL SPECIFICATIONS

- Nitrogen testing of soils, plants and manures for effective nutrient management planning. Planning nutrient applications is a vital farm management tool to ensure that applied nutrients (either in terms of bagged fertiliser or manures) match the crop demand to optimise yield and minimise environmental losses.
- Support for combination of Nitrogen focused testing including (but not limited to) Soil Mineral Nitrogen (SMN) testing, organic matter, tissue samples and manure nitrogen testing.
- Soil Mineral Nitrogen (SMN) results to be utilised to work out Soil Nitrogen Supply (SNS) and N indexes. Soil Mineral Nitrogen (SMN) samples to be collected as close to planting as possible & not within two months of applying nitrogen fertiliser or organic materials.
- Specifics of soil sampling to be based on farm situation, needs and interest and results to feed into the farm nutrient management plan.
- Applicant to choose their own supplier (including agronomist) for these services as agreed with Portsmouth Water, although we have suppliers we can recommend (Appendix 2).

TARGETING (where funding will be offered)

- Measure will be available to low, medium and high risk holdings. Please refer to Portsmouth Water Risk Map (Appendix 1).

BENEFITS

- ✓ **Water Quality**
Reduced risk of over application therefore reduced nitrate leaching risk especially post-harvest (due to high N residuals).
- ✓ **Soil Health**
Better understanding of soil health.
- ✓ **Financial**
Reduced wastage of nitrate fertiliser (and costs).

MEASURE 8

VARIABLE NITROGEN SERVICE (N MAPPING) - HIGH RISK 100% OF AGREED TOTAL

GENERAL SPECIFICATIONS

- Support for variable nitrogen mapping.
- Satellite images and the application files to suit on farm GPS/Fertiliser/Sprayer controller and variable rate mapping.
- Agreement holders must use variable rates of N application as recommended by their precision farming service provider.
- No area restriction for service on high-risk holdings.
- Consultation with a soil specialist through the growing season on nitrogen rates and advise/supply correct variable plans for that application.
- Applicant to choose their own supplier for this service as agreed with Portsmouth Water, although we have suppliers we can recommend (Appendix 2).

TARGETING (where funding will be offered)

- Measure will be available to high risk holdings. Please refer to Portsmouth Water Risk Map (Appendix 1).

BENEFITS

- ✓ **Water Quality**
Precise and informed fertiliser applications to reduce the risk of over application therefore reduced nitrate leaching risk especially post-harvest (due to high N residuals).
- ✓ **Soil Health**
Better understanding of soil health, reduced 'trafficking'.
- ✓ **Financial**
Reduced wastage of nitrate fertiliser (and costs). Greater and/or more consistent crop yields and protein content across fields.

MEASURE 9

VARIABLE NITROGEN SERVICE (N MAPPING) - MEDIUM & LOW RISK 100% OF AGREED TOTAL (UP TO 150Ha)

GENERAL SPECIFICATIONS

- Support for variable nitrogen mapping.
- Satellite images and the application files to suit on farm GPS/Fertiliser/Sprayer controller and variable rate mapping.
- Agreement holders must use variable rates of N application as recommended by their precision farming service provider.
- Area restriction for service on medium and low risk holdings (up to an area of 150 Ha/Farm (370.5 acres).
- Consultation with a soil specialist through the growing season on nitrogen rates and advise/ supply correct variable plans for that application.
- Applicant to choose their own supplier for this service as agreed with Portsmouth Water, although we have suppliers we can recommend (Appendix 2).

TARGETING (where funding will be offered)

- Measure will be available to low and medium risk holdings. Please refer to Portsmouth Water Risk Map (Appendix 1).

BENEFITS

- ✓ **Water Quality**
Precise and informed fertiliser applications to reduce the risk of over application therefore reduced nitrate leaching risk especially post-harvest (due to high N residuals).
- ✓ **Soil Health**
Better understanding of soil health, reduced 'trafficking'.
- ✓ **Financial**
Reduced wastage of nitrate fertiliser (and costs). Greater and/or more consistent crop yields and protein content across fields.

MEASURE 10

NUTRIENT MANAGEMENT PLAN

100% OF AGREED TOTAL

GENERAL SPECIFICATIONS

- A farm specific nutrient management plan taking into consideration recent analysis results, support for testing available under Measure 7.
- If organic manures are used, the nitrogen content must be taken into account in nutrient management plan.
- Soil and crop tissue N testing will provide understanding of nitrogen residues and availability to inform more accurate application levels.
- Applicant to choose their own supplier (including agronomist) for these services as agreed with Portsmouth Water, although we have suppliers we can recommend (Appendix 2).

TARGETING (where funding will be offered)

- Measure will be available to low, medium and high risk holdings. Please refer to Portsmouth Water Risk Map (Appendix 1).

BENEFITS

- ✓ **Water Quality**
Better informed nutrient applications potential to reduce the risk of over application therefore reduced nitrate leaching risk especially post-harvest (due to high N residuals).
- ✓ **Financial**
Reduced wastage of nitrate fertiliser (and costs). Greater and/or more consistent crop yields and protein content across fields.

HOW TO APPLY

The PES Application Form is available to download from the Downs and Harbours Clean Water Partnership website (www.cleanwaterpartnership.co.uk) or available from PW Catchment Officer.

PES grants are not considered to have been agreed unless Portsmouth Water issues a formal agreement.

All applications should be sent either by email to the Catchment Management Department email address: catchment.management@portsmouthwater.co.uk or alternatively by post to the following address for the attention of the Catchment and Environment Department:

Portsmouth Water Ltd
Catchment and Environment Department
PO Box 8
West Street
Havant
Hampshire
PO9 1LG

Data Protection

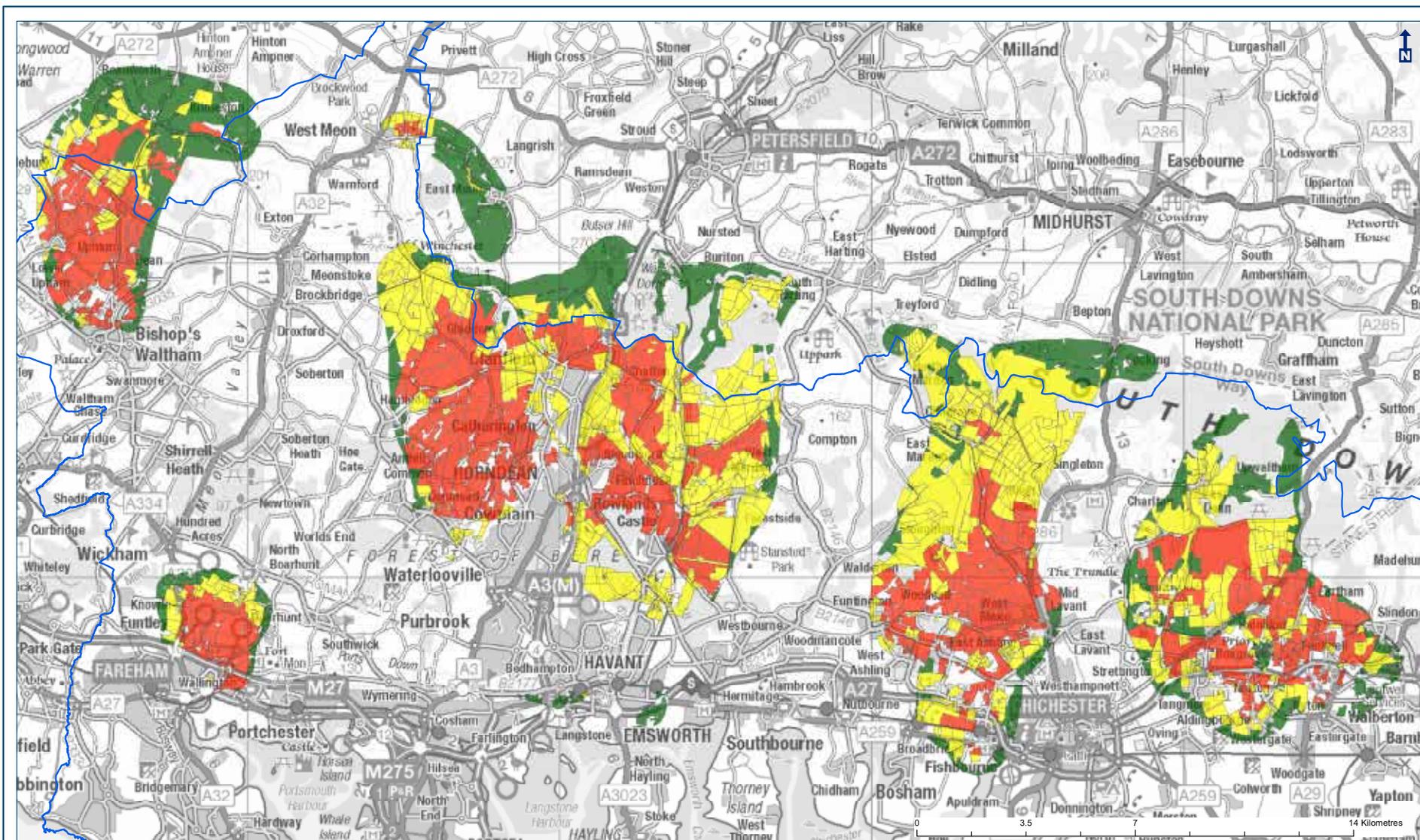
The data and documentation collected as part of your application will be held securely and will be processed at all times in accordance with the Data Protection Act 2018.

Your application and accompanying documents will be held electronically within Portsmouth Water's Catchment Management team and only those who require access to the data will be able to process this. If you submit your application by post, the application form and accompanying documents will be scanned and the hardcopy documents securely destroyed.

Successful applications will be held until 2030 and unsuccessful applications will be held until 2025 as per the required and recommended timescales.

The contact details provided will be used to confirm if your application has been successful or unsuccessful.

APPENDIX 1 | Portsmouth Water Risk Map



- Highest Risk**
- 1-4
 - 5-6
 - 7-9
- Portsmouth Water company boundary

Risk for each field has been defined by assigning scores to the following criteria:

- Karstic feature present in field: SPZ 1 and Groundwater Nitrate Risk High are each given a score of 3
- Karstic feature present in Catchment, SPZ 2 and Groundwater Nitrate Risk Medium are each given a score of 2
- Karstic feature absent, SPZ 3 and Groundwater Nitrate Risk Medium - Low are each given a score of 1.

Risk scores for each land parcel are then combined to produce an overall risk score out of a potential 1 to 9.

Categorisation of risk level:

- 1-4 = Low
- 5-6 = Medium
- 7-9 = High

Fields outside SPZs have no risk score applied.

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1:80,000

PORTSMOUTH WATER'S SUGGESTED SUPPLIER LIST

SUPPLIER NAME	MEASURE
S. Woodley Crop Services	7 & 10
ADAS	7 & 10
Bartholomews Agri Food Ltd	7 & 10
Chichester Crop Consultancy	7 & 10
Crop Management Partners LLP	7 & 10
SOYL	8 & 9
Hummingbird Technologies	8 & 9