



Farm  
Advisory  
Service

# Arable



The UK reference  
for farm business  
management



# Introduction

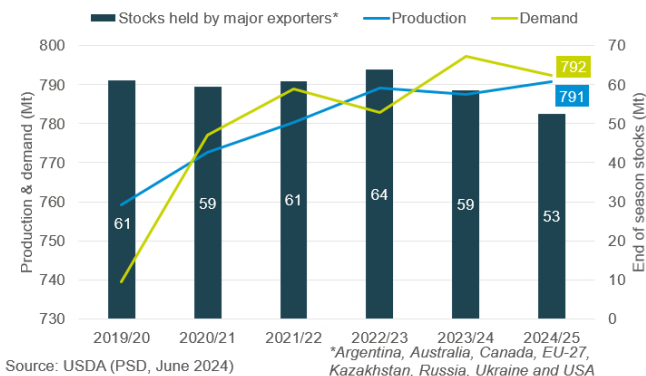
## Markets and price drivers

The forecast for global cereal production in 2024 is estimated at 2,854 Mt, up fractionally from 2023 and marking a new all-time high. The increase reflects improved prospects for coarse grains, with the world production forecast at 1,530 Mt. The bolstered outlook for coarse grains largely rests on better production expectations for maize harvests in U.S, Argentina and Brazil. Nevertheless, Brazil's output is still anticipated to fall well short of the record of 2023. Forecasts for maize production are also raised for Ukraine and cumulatively these gains more than offset downgrades to production in eastern Asia and Southern Africa

Figure 1 represents the global wheat market. The USDA's summer wheat report estimates that Canada, the US, Argentina, and Australia will produce an additional 14 Mt of wheat in 2024, which will offset the anticipated 15 Mt drop in production from the EU and Black Sea regions. This is expected to heighten competition and drive more aggressive pricing in key export markets, creating a bearish outlook for global wheat markets and domestic prices. US wheat production is expected to increase by 55 Mt, a 10 Mt increase from the previous three-year average. The market going forward will thus consider both the negative impact of this rising US wheat stock combined with aggressive Russian wheat sales and factor in the upside potential to price from reduced EU production and associated EU quality concerns. The US will need to find new markets for their surplus, and US wheat prices are reflecting this shift. We may see stronger export figures from the US, including greater sales to "unusual" destinations like Europe or North Africa.

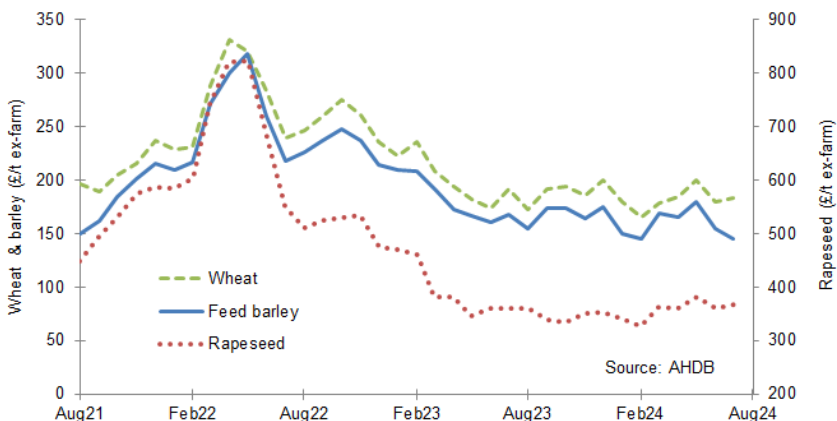
Overall, global markets should be well-supplied this season, with export surpluses more evenly distributed among various regions. Even if production decreases in Europe, the UK, Russia, and /or Ukraine, domestic prices may not rise automatically due to the relative ease with which grain ships between continents.

Figure 1 – Global Wheat Market



Despite a large carry in stock of wheat (3Mt), the UK will need to import large quantities of higher protein wheat in 2024/25 to offset the anticipated lower 2024 harvest output, estimated at 11-12Mt. This scenario will likely stimulate higher domestic wheat prices (figure 2) to attract imports. On the other hand, with the largest ending stocks of feed barley in several years, the UK will continue to be a net exporter of feed barley. Therefore, UK barley prices must remain low enough to stay competitive in the export market, particularly to Spain and Portugal.

Figure 2 – UK grain and oilseed prices (£/t ex-farm)



The EU-27+UK rapeseed crop is forecast at 19.4Mt down from last year’s rapeseed crop of 21.4Mt. Of that, the UK is expecting to harvest 0.85Mt, less than half the annual UK crush requirement of 2Mt.

Livestock feed followed by milling, malting, distilling and exports are the main UK markets for wheat and barley. In Scotland, the whisky sector uses around half of total Scottish grain output.

The UK produces about 1 million tonnes of oats annually with usage dominated by the oat milling sector. Use as an animal feed depends on comparative barley price for ration inclusion. Oats have a high fibre content which is useful for ruminant diets and horses but not suitable for poultry.

## Marketing

Achieving a satisfactory grain price is essential for profitable cereal production. Grain and oilseed producers benefit from well-developed futures markets which make for transparent pricing and enable crops to be bought and sold up to two years ahead of harvest. Given that prices readily swing by over £100/t between seasons, arable farmers should consider spreading sales to achieve a satisfactory average. It is essential

that arable farmers set their own target prices based on their costs and margin requirements.

Premium crops such as malting barley and milling oats are generally grown on contract as there can be little or no spot trade at harvest, particularly in Scotland. Contract conditions vary widely but will require that specific standards are attained such as moisture, germination, nitrogen levels and screenings. Many contracts offer growers flexibility in the pricing, through use of min-max or LIFFE wheat futures as a base.

### **Margins**

Crop returns are highly sensitive to the yield and market price. Differences in fixed costs, particularly machinery, can have the greatest impact on profitability while variations in input costs such as fertiliser and sprays are relatively small between farms. Higher straw prices in the north and west can result in a good return from straw than in otherwise more marginal cereal cropping areas. Straw prices have been strong in recent years boosting returns across Scotland.

### **Variety choice**

Crop varieties should be selected to match the farm conditions, the chosen agronomic strategy and intended end use. In Scotland for example, 90% of wheat grown is for distilling requiring soft endosperm characteristics. Feed markets are less demanding but may require some parameters to be met such as minimum specific weight. For home use other characteristics such as straw length can be important. Premium markets such as malting barley and milling wheat have very specific requirements and growers need to refer to the lists of approved varieties.

See links to relevant market and variety information:

Scottish varieties:

<https://www.sruc.ac.uk/media/4qybv20b/sruc-cereals-recommended-list-2024-tables-winter-edition-w1.pdf>

UK recommended lists:

<https://ahdb.org.uk/knowledge-library/recommended-lists-for-cereals-and-oilseeds-rl>

Malting requirements and varieties: [www.ukmalt.com/](http://www.ukmalt.com/)

Milling requirements: [www.nabim.org.uk/wheat/wheat-varieties/](http://www.nabim.org.uk/wheat/wheat-varieties/)

### **Subsidies and support**

For details of the latest subsidy arrangements see the Rural Aid Scheme section.



## Wheat - Winter

### PHYSICAL DATA

#### (a) Seed

Certified seed second generation (C2) sown at 230 kg/ha (1.83 cwt/acre).

#### (b) Fertiliser

200 : 67 : 83 kg/ha N : P<sub>2</sub>O<sub>5</sub> : K<sub>2</sub>O (160 : 54 : 66 units/acre). See Crop Inputs section for more information on nutrient planning.

#### (c) Sprays

*Herbicides* Autumn residual herbicide to control annual meadow grass and broad leaved weeds and one herbicide in spring.

*Fungicides* Four fungicide applications at GS25-30, GS31-32, GS39 and GS59 to cover eyespot, septoria and head diseases, including growth regulation.

Additional treatments to the basic programme could include:

*Take all* £180/t for seed treatment.

*Mildew* £15.50/ha

*Aphids* £6.51/ha

*Wild oats* £32.50/ha

*Slugs* £11.40/ha

*Annual meadow grass* £27.74/ha per application.

*Black grass* £52.00/ha (spring control).

*Bromes* £41.50/ha

*Desiccant* £6.80/ha

#### (d) Other crop expenses

For baling straw, costs for net wrap at £1.10/bale for large round straw bales average weight 200kg are included. Omit Other expenses costs if selling straw in the bout.

Additives can be used to preserve moist grain for feeding livestock. Cost will vary depending on product, length of storage period and moisture content at treatment. Alkaline grain treatments (for grain harvested at 16-22% moisture for long term storage), add £35/t. Propionic acid treatments (for grain harvested at 18-20% moisture for long term storage), add £15-20/t. Prices are subject to change at short notice. Treatment costs exclude grain processing and straw tubelining (see Labour and Machinery section for these costs).

## Wheat - Winter

### GROSS MARGIN DATA

|                            |              |       |                    |       |              |       |
|----------------------------|--------------|-------|--------------------|-------|--------------|-------|
| Grain yield: t/ha (t/acre) | 7.0          | (2.8) | 8.5                | (3.4) | 10.0         | (4.0) |
| Straw yield: t/ha (t/acre) | 3.2          | (1.3) | 4.2                | (1.7) | 5.2          | (2.1) |
| OUTPUT                     |              |       | <b>£/ha (acre)</b> |       |              |       |
| Grain @ £190/t*            | 1,330        |       | 1,615              |       | 1,900        |       |
| Straw @ £70/t              | 224          |       | 291                |       | 364          |       |
|                            | <u>1,554</u> | (629) | <u>1,906</u>       | (771) | <u>2,264</u> | (916) |
| VARIABLE COSTS             |              |       |                    |       |              |       |
| Seed @ £536/t              | 123          |       | 123                |       | 123          |       |
| Fertiliser                 | 310          |       | 310                |       | 310          |       |
| Sprays                     | 172          |       | 172                |       | 172          |       |
| Other expenses             | 16           |       | 21                 |       | 26           |       |
|                            | <u>621</u>   | (251) | <u>626</u>         | (253) | <u>631</u>   | (255) |
| GROSS MARGIN               | <u>933</u>   | (378) | <u>1,280</u>       | (518) | <u>1,633</u> | (661) |

### GRAIN PRICE SENSITIVITY

|         |       |       |       |       |       |       |
|---------|-------|-------|-------|-------|-------|-------|
| £170 /t | 793   | (321) | 1,110 | (449) | 1,433 | (580) |
| £205 /t | 1,038 | (420) | 1,408 | (570) | 1,783 | (722) |
| £220 /t | 1,143 | (463) | 1,535 | (621) | 1,933 | (782) |

\* Feed price (milling premium £15-40/t, biscuit premium £5-15/t)

#### *Basis of data:*

Sale price estimate for 2025 harvest, November ex-farm spot price at 15% moisture content and average quality. Straw sold baled, ex-farm price estimate for arable areas.

# Wheat - Spring

## PHYSICAL DATA

### (a) Seed

Certified seed second generation (C2) sown at 220 kg/ha (1.75 cwt/acre).

### (b) Fertiliser

150 : 52 : 71 kg/ha N : P<sub>2</sub>O<sub>5</sub> : K<sub>2</sub>O (136 : 42 : 57 units/acre). See Crop Inputs section for more information on nutrient planning.

### (c) Sprays

*Herbicides* One application for spring germinating broadleaved weeds.

*Fungicides* Two applications for leaf diseases at GS31-32 and GS39-49.

Additional sprays to the basic programme could include:

*Mildew* £15.50/ha

*Wild oats* £29.25/ha

*Desiccant* £6.80/ha

### (d) Other crop expenses

For baling straw, costs for net wrap at £1.10/bale for large round straw bales average weight 200kg are included. Omit Other expenses costs if selling straw in the bout.

Additives can be used to preserve moist grain for feeding livestock. Cost will vary depending on product, length of storage period and moisture content at treatment. Alkaline grain treatments (for grain harvested at 16-22% moisture for long term storage), add £35/t. Propionic acid treatments (for grain harvested at 18-20% moisture for long term storage), add £15-20/t. Prices are subject to change at short notice. Treatment costs exclude grain processing and straw tubelining (see Labour and Machinery section for these costs).



## Wheat - Spring

### GROSS MARGIN DATA

|                            |              |       |                    |       |              |       |
|----------------------------|--------------|-------|--------------------|-------|--------------|-------|
| Grain yield: t/ha (t/acre) | 4.5          | (1.8) | 6.5                | (2.6) | 8.5          | (3.4) |
| Straw yield: t/ha (t/acre) | 2.5          | (1.0) | 3.6                | (1.4) | 4.7          | (1.9) |
| OUTPUT                     |              |       | <b>£/ha (acre)</b> |       |              |       |
| Grain @ £190/t*            | 855          |       | 1,235              |       | 1,615        |       |
| Straw @ £70/t              | 174          |       | 251                |       | 328          |       |
|                            | <u>1,029</u> | (416) | <u>1,486</u>       | (601) | <u>1,943</u> | (786) |
| VARIABLE COSTS             |              |       |                    |       |              |       |
| Seed @ £635/t              | 140          |       | 140                |       | 140          |       |
| Fertiliser                 | 240          |       | 240                |       | 240          |       |
| Sprays                     | 63           |       | 63                 |       | 63           |       |
| Other expenses             | 12           |       | 18                 |       | 23           |       |
|                            | <u>455</u>   | (184) | <u>461</u>         | (187) | <u>466</u>   | (189) |
| GROSS MARGIN               | <u>574</u>   | (232) | <u>1,025</u>       | (414) | <u>1,477</u> | (597) |

### GRAIN PRICE SENSITIVITY

|         |     |       |       |       |       |       |
|---------|-----|-------|-------|-------|-------|-------|
| £170 /t | 484 | (196) | 895   | (362) | 1,307 | (529) |
| £205 /t | 641 | (259) | 1,123 | (454) | 1,604 | (649) |
| £220 /t | 709 | (287) | 1,220 | (494) | 1,732 | (701) |

\* Feed price (milling premium £15-40/t, biscuit premium £5-15/t)

#### *Basis of data:*

Sale price estimate for 2025 harvest, November ex-farm spot price at 15% moisture content and average quality. Straw sold baled, ex-farm price estimate for arable areas.

# Barley - Winter

## PHYSICAL DATA

### (a) Seed

Certified seed second generation (C2) sown at 220 kg/ha (1.75 cwt/acre). Alternatively, hybrid 6 row sown at 145 kg/ha (1.16cwt/ac). Conventional seed price used.

### (b) Fertiliser

180 : 67 : 83 kg/ha N : P<sub>2</sub>O<sub>5</sub> : K<sub>2</sub>O (144 : 54 : 66 units/acre). See Crop Inputs section for more information on nutrient planning.

### (c) Sprays

*Herbicides* Autumn residual herbicide to control annual meadow grass and broad leaved weeds and one herbicide in spring.

*Fungicides* Three fungicide applications at GS25-30, GS31 and GS49 for rhynchosporium, mildew and other leaf diseases.

Additional sprays to the basic programme could include:

*Wild oats* £32.67/ha

*Aphids* £6.51/ha

*Desiccant* £6.80/ha

### (d) Other crop expenses

For baling straw, costs for net wrap at £1.10/bale for large round straw bales average weight 200kg are included. Omit Other expenses costs if selling straw in the bout.

Additives can be used to preserve moist grain for feeding livestock. Cost will vary depending on product, length of storage period and moisture content at treatment. Alkaline grain treatments (for grain harvested at 16-22% moisture for long term storage), add £35/t. Propionic acid treatments (for grain harvested at 18-20% moisture for long term storage), add £15-20/t. Prices are subject to change at short notice. Treatment costs exclude grain processing and straw tubelining (see Labour and Machinery section for these costs).

## Barley - Winter

### GROSS MARGIN DATA

|                            |              |       |                    |       |              |       |
|----------------------------|--------------|-------|--------------------|-------|--------------|-------|
| Grain yield: t/ha (t/acre) | 6.0          | (2.4) | 7.5                | (3.0) | 9.0          | (3.6) |
| Straw yield: t/ha (t/acre) | 3.3          | (1.3) | 4.1                | (1.7) | 5.0          | (2.0) |
| OUTPUT                     |              |       | <b>£/ha (acre)</b> |       |              |       |
| Grain @ £170/t*            | 1,020        |       | 1,275              |       | 1,530        |       |
| Straw @ £80/t              | 264          |       | 330                |       | 396          |       |
|                            | <u>1,284</u> | (520) | <u>1,605</u>       | (650) | <u>1,926</u> | (779) |
| VARIABLE COSTS             |              |       |                    |       |              |       |
| Seed @ £503/t              | 111          |       | 111                |       | 111          |       |
| Fertiliser                 | 291          |       | 291                |       | 291          |       |
| Sprays                     | 113          |       | 113                |       | 113          |       |
| Other expenses             | 17           |       | 21                 |       | 25           |       |
|                            | <u>532</u>   | (215) | <u>536</u>         | (217) | <u>540</u>   | (218) |
| GROSS MARGIN               | <u>753</u>   | (305) | <u>1,069</u>       | (433) | <u>1,386</u> | (561) |

### GRAIN PRICE SENSITIVITY

|         |     |       |       |       |       |       |
|---------|-----|-------|-------|-------|-------|-------|
| £150 /t | 633 | (256) | 919   | (372) | 1,206 | (488) |
| £185 /t | 843 | (341) | 1,182 | (478) | 1,521 | (616) |
| £200 /t | 933 | (378) | 1,294 | (524) | 1,656 | (670) |

\* Feed price (malting price approx. £10-20/t higher)

#### *Basis of data:*

Sale price estimate for 2025 harvest, November ex-farm spot price at 15% moisture content and average quality. Straw sold baled, ex-farm price estimate for arable areas.

# Barley - Spring

## PHYSICAL DATA

### (a) Seed

Certified seed second generation (C2) sown at 190 kg/ha (1.51 cwt/acre).

### (b) Fertiliser

130 : 52 : 71 kg/ha N : P<sub>2</sub>O<sub>5</sub> : K<sub>2</sub>O (104 : 42 : 57 units/acre). See Crop Inputs section for more information on nutrient planning.

### (c) Sprays

*Herbicides* Post emergence herbicide to control broadleaved weeds.

*Fungicides* Two applications at GS31 and GS45 for rhynchosporium, mildew and other leaf diseases.

Additional sprays to the basic programme could include:

*Mildew* £14.50/ha

*Wild oats* £26.00/ha

*Aphids* £6.51/ha

*Desiccant* £6.80/ha

### (d) Other crop expenses

For baling straw, costs for net wrap at £1.10/bale for large round straw bales average weight 200kg are included. Omit Other expenses costs if selling straw in the bout.

Additives can be used to preserve moist grain for feeding livestock. Cost will vary depending on product, length of storage period and moisture content at treatment. Alkaline grain treatments (for grain harvested at 16-22% moisture for long term storage), add £35/t. Propionic acid treatments (for grain harvested at 18-20% moisture for long term storage), add £15-20/t. Prices are subject to change at short notice. Treatment costs exclude grain processing and straw tubelining (see Labour and Machinery section for these costs).

## Barley - Spring

### GROSS MARGIN DATA

|                            |            |       |                    |       |              |       |
|----------------------------|------------|-------|--------------------|-------|--------------|-------|
| Grain yield: t/ha (t/acre) | 4.0        | (1.6) | 5.5                | (2.2) | 7.5          | (3.0) |
| Straw yield: t/ha (t/acre) | 2.1        | (0.8) | 2.9                | (1.2) | 3.9          | (1.6) |
| OUTPUT                     |            |       | <b>£/ha (acre)</b> |       |              |       |
| Grain @ £170/t*            | 680        |       | 935                |       | 1,275        |       |
| Straw @ £80/t              | 166        |       | 229                |       | 312          |       |
|                            | <u>846</u> | (342) | <u>1,164</u>       | (471) | <u>1,587</u> | (642) |
| VARIABLE COSTS             |            |       |                    |       |              |       |
| Seed @ £543/t              | 103        |       | 103                |       | 103          |       |
| Fertiliser                 | 220        |       | 220                |       | 220          |       |
| Sprays                     | 65         |       | 65                 |       | 65           |       |
| Other expenses             | 10         |       | 14                 |       | 20           |       |
|                            | <u>398</u> | (161) | <u>402</u>         | (163) | <u>408</u>   | (165) |
| GROSS MARGIN               | <u>448</u> | (181) | <u>762</u>         | (308) | <u>1,180</u> | (477) |

### GRAIN PRICE SENSITIVITY

|         |     |       |     |       |       |       |
|---------|-----|-------|-----|-------|-------|-------|
| £150 /t | 368 | (149) | 652 | (264) | 1,030 | (417) |
| £185 /t | 508 | (206) | 844 | (342) | 1,292 | (523) |
| £200 /t | 568 | (230) | 927 | (375) | 1,405 | (569) |

\* Feed price (malting price approx. £15-50/t higher)

#### *Basis of data:*

Sale price estimate for 2025 harvest, November ex-farm spot price at 15% moisture content and average quality. Straw sold baled, ex-farm price estimate for arable areas.

## Oats - Winter

### PHYSICAL DATA

**(a) Seed**

Certified seed second generation (C2) sown at 190 kg/ha (1.51 cwt/acre).

**(b) Fertiliser**

140 : 53 : 104 kg/ha N : P<sub>2</sub>O<sub>5</sub> : K<sub>2</sub>O (112 : 42 : 83 units/acre). See Crop Inputs section for more information on nutrient planning.

**(c) Sprays**

*Herbicides* Autumn residual herbicide to control annual meadow grass and broad leaved weeds and one herbicide in spring.

*Fungicides* Two sprays for mildew and crown rust at GS31 and GS49 including growth regulation.

**(d) Other crop expenses**

For baling straw, costs for net wrap at £1.10/bale for large round straw bales average weight 200kg are included. Omit Other expenses costs if selling straw in the bout.

Additives can be used to preserve moist grain for feeding livestock. Cost will vary depending on product, length of storage period and moisture content at treatment. Alkaline grain treatments (for grain harvested at 16-22% moisture for long term storage), add £35/t. Propionic acid treatments (for grain harvested at 18-20% moisture for long term storage), add £15-20/t. Prices are subject to change at short notice. Treatment costs exclude grain processing and straw tubelining (see Labour and Machinery section for these costs).

## Oats - Winter

### GROSS MARGIN DATA

|                            |              |       |                    |       |              |       |
|----------------------------|--------------|-------|--------------------|-------|--------------|-------|
| Grain yield: t/ha (t/acre) | 5.0          | (2.0) | 7.5                | (3.0) | 9.0          | (3.6) |
| Straw yield: t/ha (t/acre) | 3.2          | (1.3) | 4.7                | (1.9) | 5.7          | (2.3) |
| OUTPUT                     |              |       | <b>£/ha (acre)</b> |       |              |       |
| Grain @ £180/t*            | 900          |       | 1,350              |       | 1,620        |       |
| Straw @ £70/t              | 221          |       | 331                |       | 397          |       |
|                            | <u>1,121</u> | (454) | <u>1,681</u>       | (680) | <u>2,017</u> | (816) |
| VARIABLE COSTS             |              |       |                    |       |              |       |
| Seed @ £559/t              | 106          |       | 106                |       | 106          |       |
| Fertiliser                 | 251          |       | 251                |       | 251          |       |
| Sprays                     | 74           |       | 74                 |       | 74           |       |
| Other expenses             | 16           |       | 24                 |       | 28           |       |
|                            | <u>447</u>   | (181) | <u>455</u>         | (184) | <u>459</u>   | (186) |
| GROSS MARGIN               | <u>674</u>   | (273) | <u>1,226</u>       | (496) | <u>1,558</u> | (630) |

### GRAIN PRICE SENSITIVITY

|         |     |       |       |       |       |       |
|---------|-----|-------|-------|-------|-------|-------|
| £160 /t | 574 | (232) | 1,076 | (435) | 1,378 | (558) |
| £195 /t | 749 | (303) | 1,339 | (542) | 1,693 | (685) |
| £210 /t | 824 | (333) | 1,451 | (587) | 1,828 | (740) |

\* Milling price

#### *Basis of data:*

Sale price estimate for 2025 harvest, November ex-farm spot price at 15% moisture content and average quality. Straw sold baled, ex-farm price estimate for arable areas.

# Oats - Spring

## PHYSICAL DATA

### (a) Seed

Certified seed second generation (C2) sown at 190 kg/ha (1.51 cwt/acre).

### (b) Fertiliser

100 : 53 : 104 kg/ha N : P<sub>2</sub>O<sub>5</sub> : K<sub>2</sub>O (80 : 42 : 83 units/acre). See Crop Inputs section for more information on nutrient planning.

### (c) Sprays

*Herbicides* Typical weed control for annual broadleaved weeds.

*Fungicides* Two sprays at GS25-30 and GS49 for mildew and crown rust including growth regulator.

### (d) Other crop expenses

For baling straw, costs for net wrap at £1.10/bale for large round straw bales average weight 200kg are included. Omit Other expenses costs if selling straw in the bout.

Additives can be used to preserve moist grain for feeding livestock. Cost will vary depending on product, length of storage period and moisture content at treatment. Alkaline grain treatments (for grain harvested at 16-22% moisture for long term storage), add £35/t. Propionic acid treatments (for grain harvested at 18-20% moisture for long term storage), add £15-20/t. Prices are subject to change at short notice. Treatment costs exclude grain processing and straw tubelining (see Labour and Machinery section for these costs).



## Oats - Spring

### GROSS MARGIN DATA

|                            |            |       |                    |       |              |       |
|----------------------------|------------|-------|--------------------|-------|--------------|-------|
| Grain yield: t/ha (t/acre) | 4.0        | (1.6) | 5.5                | (2.2) | 7.5          | (3.0) |
| Straw yield: t/ha (t/acre) | 2.1        | (0.8) | 3.0                | (1.2) | 3.9          | (1.6) |
| <b>OUTPUT</b>              |            |       | <b>£/ha (acre)</b> |       |              |       |
| Grain @ £180/t*            | 720        |       | 990                |       | 1,350        |       |
| Straw @ £70/t              | 147        |       | 210                |       | 273          |       |
|                            | <u>867</u> | (351) | <u>1,200</u>       | (486) | <u>1,623</u> | (657) |
| <b>VARIABLE COSTS</b>      |            |       |                    |       |              |       |
| Seed @ £580/t              | 110        |       | 110                |       | 110          |       |
| Fertiliser                 | 212        |       | 212                |       | 212          |       |
| Sprays                     | 61         |       | 61                 |       | 61           |       |
| Other expenses             | 11         |       | 15                 |       | 20           |       |
|                            | <u>394</u> | (159) | <u>398</u>         | (161) | <u>403</u>   | (163) |
| <b>GROSS MARGIN</b>        | <u>474</u> | (192) | <u>802</u>         | (325) | <u>1,221</u> | (494) |

### GRAIN PRICE SENSITIVITY

|         |     |       |     |       |       |       |
|---------|-----|-------|-----|-------|-------|-------|
| £160 /t | 394 | (159) | 692 | (280) | 1,071 | (433) |
| £195 /t | 534 | (216) | 885 | (358) | 1,333 | (539) |
| £210 /t | 594 | (240) | 967 | (391) | 1,446 | (585) |

\* Milling price

#### *Basis of data:*

Sale price estimate for 2025 harvest, November ex-farm spot price at 15% moisture content and average quality. Straw sold baled, ex-farm price estimate for arable areas.

# Triticale

## PHYSICAL DATA

### (a) Seed

230 kg/ha (1.83 cwt/acre).

### (b) Fertiliser

180 : 52 : 71 kg/ha N : P<sub>2</sub>O<sub>5</sub> : K<sub>2</sub>O (144 : 42 : 57 units/acre). See Crop Inputs section for more information on nutrient planning.

### (c) Sprays

*Herbicides* Pre-emergence application.

*Fungicides* Two sprays at GS31 and GS39-45 including growth regulation.

### (d) Other crop expenses

For baling straw, costs for net wrap at £1.10/bale for large round straw bales average weight 200kg are included. Omit Other expenses costs if selling straw in the bout.

## Triticale

### GROSS MARGIN DATA

|                            |            |       |                    |       |              |       |
|----------------------------|------------|-------|--------------------|-------|--------------|-------|
| Grain yield: t/ha (t/acre) | 4.0        | (1.6) | 6.0                | (2.4) | 8.0          | (3.2) |
| Straw yield: t/ha (t/acre) | 2.6        | (1.1) | 3.9                | (1.6) | 5.2          | (2.1) |
| <b>OUTPUT</b>              |            |       |                    |       |              |       |
|                            |            |       | <b>£/ha (acre)</b> |       |              |       |
| Grain @ £190/t             | 760        |       | 1,140              |       | 1,520        |       |
| Straw @ £70/t              | 182        |       | 273                |       | 364          |       |
|                            | <u>942</u> | (381) | <u>1,413</u>       | (572) | <u>1,884</u> | (762) |
| <b>VARIABLE COSTS</b>      |            |       |                    |       |              |       |
| Seed @ £595/t              | 137        |       | 137                |       | 137          |       |
| Fertiliser                 | 268        |       | 268                |       | 268          |       |
| Sprays                     | 65         |       | 65                 |       | 65           |       |
| Other expenses             | 13         |       | 20                 |       | 26           |       |
|                            | <u>483</u> | (195) | <u>490</u>         | (198) | <u>496</u>   | (201) |
| <b>GROSS MARGIN</b>        | <u>459</u> | (186) | <u>924</u>         | (374) | <u>1,388</u> | (561) |

### GRAIN PRICE SENSITIVITY

|         |     |       |       |       |       |       |
|---------|-----|-------|-------|-------|-------|-------|
| £170 /t | 379 | (153) | 804   | (325) | 1,228 | (497) |
| £205 /t | 519 | (210) | 1,014 | (410) | 1,508 | (610) |
| £220 /t | 579 | (234) | 1,104 | (447) | 1,628 | (659) |

#### *Basis of data:*

Sale price estimate for 2025 harvest, November ex-farm spot price at 15% moisture content and average quality. Straw sold baled, ex-farm price estimate for arable areas.

# Oilseed Rape - Winter

## PHYSICAL DATA

### (a) Seed

|           |  |
|-----------|--|
| Oil       | 45%  |
| Seed rate | Hybrid - 4kg/ha : Conventional - 5kg/ha<br>Conventional seed price used. |

### (b) Fertiliser

200 : 49 : 38 + 75 kg/ha N : P<sub>2</sub>O<sub>5</sub> : K<sub>2</sub>O + SO<sub>3</sub>  
(160 : 39 : 30 + 60 units/acre). See Crop Inputs section for more information on nutrient planning.

### (c) Sprays

|                    |   |
|--------------------|---|
| <i>Herbicides</i>  | Pre-emergence herbicide to control annual meadow grass and broadleaved weeds.   |
| <i>Fungicides</i>  | Autumn and spring fungicides for sclerotinia, light leaf spot or phoma.   |
| <i>Desiccation</i> | Desiccation, including the use of a pod-sealant, has largely replaced swathing. If swathing is used over desiccation, reduce spray costs by £14.00/ha. For swathing costs see Labour and Machinery section. |

Additional sprays to the basic programme could include:

|  |                                  |
|--|----------------------------------|
| <i>Slugs</i>                                     | £11.40/ha per application.       |
| <i>Sclerotinia</i>                               | £55.69/ha (high risk situations) |
| <i>Rape winter stem weevil and pollen beetle</i> | £7.75/ha                         |
| <i>Volunteer cereals</i>                         | £10.68/ha                        |
| <i>Mayweed</i>                                   | £28.35/ha                        |

### (d) Other crop expenses

Assuming straw has been chopped. If baling, include costs for net wrap at £1.10/bale for round straw bales, average weight 200 kg.

## Oilseed Rape - Winter

### GROSS MARGIN DATA

|                            |              |       |                    |       |              |       |
|----------------------------|--------------|-------|--------------------|-------|--------------|-------|
| Grain yield: t/ha (t/acre) | 3.0          | (1.2) | 4.0                | (1.6) | 5.0          | (2.0) |
| Straw yield: t/ha (t/acre) | -            | (0.0) | -                  | (0.0) | -            | (0.0) |
| <b>OUTPUT</b>              |              |       | <b>£/ha (acre)</b> |       |              |       |
| Grain @ £370/t             | 1,110        |       | 1,480              |       | 1,850        |       |
| Straw @ £0/t               | -            |       | -                  |       | -            |       |
|                            | <u>1,110</u> | (449) | <u>1,480</u>       | (599) | <u>1,850</u> | (749) |
| <b>VARIABLE COSTS</b>      |              |       |                    |       |              |       |
| Seed @ £16/kg              | 80           |       | 80                 |       | 80           |       |
| Fertiliser                 | 265          |       | 265                |       | 265          |       |
| Sprays                     | 164          |       | 164                |       | 164          |       |
| Other expenses             | -            |       | -                  |       | -            |       |
|                            | <u>509</u>   | (206) | <u>509</u>         | (206) | <u>509</u>   | (206) |
| <b>GROSS MARGIN</b>        | <u>601</u>   | (243) | <u>971</u>         | (393) | <u>1,341</u> | (543) |

### GRAIN PRICE SENSITIVITY

|         |     |       |       |       |       |       |
|---------|-----|-------|-------|-------|-------|-------|
| £320 /t | 451 | (183) | 771   | (312) | 1,091 | (442) |
| £420 /t | 751 | (304) | 1,171 | (474) | 1,591 | (644) |
| £470 /t | 901 | (365) | 1,371 | (555) | 1,841 | (745) |

#### *Basis of data:*

Sale price estimate for 2025 harvest, November ex-farm price including oil bonus. An average oil content of 43% has been assumed resulting in a bonus of 4.5% above the base price. The oil bonus comprises a 1.5% increase in the price for every 1% rise in oil content above 40%.

# Oilseed Rape - Spring

## PHYSICAL DATA

### (a) Seed

|           |         |
|-----------|---------|
| Oil       | 45%     |
| Seed rate | 5 kg/ha |

### (b) Fertiliser

100 : 28 : 22 + 40 kg/ha N : P<sub>2</sub>O<sub>5</sub> : K<sub>2</sub>O + SO<sub>3</sub>  
(80 : 22 : 18 + 32 units/acre). See Crop Inputs section for more information on nutrient planning.

### (c) Sprays

*Herbicides* Pre-emergence herbicide for problem weeds such as shepherds' purse.

*Fungicides* One spray to control pollen beetle.

*Desiccation* Desiccation has largely replaced swathing. If swathing is used over desiccation, reduce spray costs by £14.00/ha. For swathing costs see Labour and Machinery section.

Additional sprays to the basic programme could include:

*Volunteer cereals* £10.68/ha

*Sclerotinia* £48.40/ha

*Pod sticker* £8.40/ha

### (d) Other crop expenses

Assuming straw has been chopped. If baling, include costs for net wrap at £1.10/bale for round straw bales, average weight 200 kg.

## Oilseed Rape - Spring

### GROSS MARGIN DATA

#### GROSS MARGIN DATA

|                            |     |       |     |       |     |       |
|----------------------------|-----|-------|-----|-------|-----|-------|
| Grain yield: t/ha (t/acre) | 1.8 | (0.7) | 2.5 | (1.0) | 3.0 | (1.2) |
| Straw yield: t/ha (t/acre) | -   | (0.0) | -   | (0.0) | -   | (0.0) |

#### OUTPUT

|                | <b>£/ha (acre)</b> |       |            |       |              |       |
|----------------|--------------------|-------|------------|-------|--------------|-------|
| Grain @ £370/t | 666                |       | 925        |       | 1,110        |       |
| Straw @ £0/t   | -                  |       | -          |       | -            |       |
|                | <u>666</u>         | (270) | <u>925</u> | (374) | <u>1,110</u> | (449) |

#### VARIABLE COSTS

|                |            |       |            |       |            |       |
|----------------|------------|-------|------------|-------|------------|-------|
| Seed @ £27/kg  | 135        |       | 135        |       | 135        |       |
| Fertiliser     | 138        |       | 138        |       | 138        |       |
| Sprays         | 59         |       | 59         |       | 59         |       |
| Other expenses | -          |       | -          |       | -          |       |
|                | <u>332</u> | (134) | <u>332</u> | (134) | <u>332</u> | (134) |

|                     |            |       |            |       |            |       |
|---------------------|------------|-------|------------|-------|------------|-------|
| <b>GROSS MARGIN</b> | <u>334</u> | (136) | <u>593</u> | (240) | <u>778</u> | (315) |
|---------------------|------------|-------|------------|-------|------------|-------|

#### GRAIN PRICE SENSITIVITY

|         |     |       |     |       |       |       |
|---------|-----|-------|-----|-------|-------|-------|
| £320 /t | 244 | (99)  | 468 | (189) | 628   | (254) |
| £420 /t | 424 | (172) | 718 | (291) | 928   | (376) |
| £470 /t | 514 | (208) | 843 | (341) | 1,078 | (436) |

#### *Basis of data:*

Sale price estimate for 2025 harvest, November ex-farm price including oil bonus. An average oil content of 43% has been assumed resulting in a bonus of 4.5% above the base price. The oil bonus comprises a 1.5% increase in the price for every 1% rise in oil content above 40%.

# Spring Field Beans

## PHYSICAL DATA

### (a) Seed

250 kg/ha (1.99 cwt/acre).

### (b) Fertiliser

0 : 40 : 40 kg/ha N : P<sub>2</sub>O<sub>5</sub> : K<sub>2</sub>O (0 : 32 : 32 units/acre). See Crop Inputs section for more information on nutrient planning.

### (c) Sprays

*Herbicides* Pre-emergence herbicide and control of annual meadow grass and broadleaved weeds.

*Fungicide* Two applications to control chocolate spot and downy mildew.

*Desiccation* Cost included.

### (d) Other crop expenses

Additives can be used to preserve pulses for feeding livestock. Cost will vary depending on product used, length of storage period and moisture of pulses at treatment. For pulses harvested at 20% moisture for long term storage, add £9-13/t grain treated with propionic acid, excluding processing (see Labour and Machinery section for processing costs).



## Spring Field Beans

### GROSS MARGIN DATA

|                            |                    |       |              |       |              |       |
|----------------------------|--------------------|-------|--------------|-------|--------------|-------|
| Grain yield: t/ha (t/acre) | 2.5                | (1.0) | 4.5          | (1.8) | 5.5          | (2.2) |
| OUTPUT                     | <b>£/ha (acre)</b> |       |              |       |              |       |
| Grain @ £240/t             | 600                |       | 1,080        |       | 1,320        |       |
|                            | <u>600</u>         | (243) | <u>1,080</u> | (437) | <u>1,320</u> | (534) |
| VARIABLE COSTS             |                    |       |              |       |              |       |
| Seed @ £600/t              | 150                |       | 150          |       | 150          |       |
| Fertiliser                 | 71                 |       | 71           |       | 71           |       |
| Sprays                     | 157                |       | 157          |       | 157          |       |
| Other expenses             | -                  |       | -            |       | -            |       |
|                            | <u>378</u>         | (153) | <u>378</u>   | (153) | <u>378</u>   | (153) |
| GROSS MARGIN               | <u>222</u>         | (90)  | <u>702</u>   | (284) | <u>942</u>   | (381) |

### GRAIN PRICE SENSITIVITY

|         |     |       |     |       |       |       |
|---------|-----|-------|-----|-------|-------|-------|
| £210 /t | 147 | (59)  | 567 | (229) | 777   | (314) |
| £255 /t | 260 | (105) | 770 | (312) | 1,025 | (415) |
| £270 /t | 297 | (120) | 837 | (339) | 1,107 | (448) |

#### *Basis of data:*

Sale price estimate 2025 harvest, November ex-farm price. Deductions for field beans, which do not meet minimum quality standards, can reduce the price considerably.

# Spring Peas

## PHYSICAL DATA

### (a) Seed

250 kg/ha (1.99 cwt/acre).

White/Large Blue Compounding Pea

### (b) Fertiliser

0 : 20 : 30 kg/ha N : P<sub>2</sub>O<sub>5</sub> : K<sub>2</sub>O (0 : 16 : 24 units/acre). See Crop Inputs section for more information on nutrient planning.

### (c) Sprays

*Herbicides* A pre-emergence herbicide to control annual and broadleaved weeds.

*Fungicide* Two sprays at flowering for downy mildew and botrytis control.

*Insecticide* Aphid control.

*Desiccation* A desiccant is included.

### (d) Other crop expenses

Additives can be used to preserve pulses for feeding livestock. Cost will vary depending on product used, length of storage period and moisture of pulses at treatment. For pulses harvested at 20% moisture for long term storage, add £9-13/t grain treated with propionic acid, excluding processing (see Labour and Machinery section for processing costs).

## Spring Peas

### GROSS MARGIN DATA

|                            |                    |       |              |       |              |       |
|----------------------------|--------------------|-------|--------------|-------|--------------|-------|
| Grain yield: t/ha (t/acre) | 2.5                | (1.0) | 4.0          | (1.6) | 5.5          | (2.2) |
| OUTPUT                     | <b>£/ha (acre)</b> |       |              |       |              |       |
| Grain @ £255/t             | <u>638</u>         |       | <u>1,020</u> |       | <u>1,403</u> |       |
|                            | 638                | (258) | 1,020        | (413) | 1,403        | (568) |
| VARIABLE COSTS             |                    |       |              |       |              |       |
| Seed @ £640/t              | 160                |       | 160          |       | 160          |       |
| Fertiliser                 | 38                 |       | 38           |       | 38           |       |
| Sprays                     | 120                |       | 120          |       | 120          |       |
| Other expenses             | -                  |       | -            |       | -            |       |
|                            | <u>318</u>         | (129) | <u>318</u>   | (129) | <u>318</u>   | (129) |
| GROSS MARGIN               | <u>320</u>         | (129) | <u>702</u>   | (284) | <u>1,085</u> | (439) |

### GRAIN PRICE SENSITIVITY

|         |     |       |     |       |       |       |
|---------|-----|-------|-----|-------|-------|-------|
| £225 /t | 245 | (99)  | 582 | (236) | 920   | (372) |
| £270 /t | 357 | (144) | 762 | (308) | 1,167 | (472) |
| £285 /t | 395 | (160) | 822 | (333) | 1,250 | (506) |

#### *Basis of data:*

Sale price estimate for 2025 harvest, November ex-farm price. Deductions for protein peas, which do not meet minimum quality standards, can reduce the price considerably. Bad weather at harvest can result in very high loss levels.

# Timothy - Hay, Greencut

## PHYSICAL DATA

### (a) System

As practised on the Carse of Stirling and Clackmannan.

### (b) Yield

Average between 7 t/ha (2.8 t/acre) and 8 t/ha (3.2 t/acre) with some aftermath grazing (or alternatively round bale silage).

Price rises usually as the season progresses but hay also loses weight with storage - as much as 15% over a winter, depending upon the conditions of storage.

### (c) Seed

Annual charge: assumes a 10-year sward life and that 'Basic' seed will be sown to keep open the option of a seed crop.

Seed rate: 13-18 kg/ha.

### (d) Fertiliser

Standard practice would see only N applied annually, usually as sulphate of ammonia, supported by periodic dressings of phosphate and potash.

The fertiliser costs overleaf consider an application of the rates below.

See Crop Inputs section for more information on nutrient planning.

| kg/ha (units/acre)                                | Average | Premium  |
|---|---------|----------|
| N   | 80 (64) | 120 (96) |
| P <sub>2</sub> O <sub>5</sub> (annual allocation) | 40 (32) | 50 (40)  |
| K <sub>2</sub> O                                  | 48 (38) | 60 (48)  |

### (e) Sprays

Annual nominal charge to cover a range of circumstances.

### (f) Other crop expenses

Net wrap cost is costed on the basis of 5-6 round bales/t and assuming one roll of net will wrap 410 bales.

## Timothy - Hay, Greencut

### GROSS MARGIN DATA

|  |            |                    |              |       |
|--|------------|--------------------|--------------|-------|
| Average yield: t/ha (acre)             | 7.0        | (2.8)              | 8.0          | (3.2) |
| OUTPUT                                 |            | <b>£/ha (acre)</b> |              |       |
| Hay (ex-field or early store) @ £130/t | 910        |                    | 1,040        |       |
| Aftermath grazing let @ £40/ha         | 40         |                    | 40           |       |
|  | <u>950</u> | (384)              | <u>1,080</u> | (437) |
| VARIABLE COSTS                         |            |                    |              |       |
| Seed (annual charge)                   | 13         |                    | 13           |       |
| Fertiliser                             | 146        |                    | 202          |       |
| Sprays (annual charge)                 | 6          |                    | 6            |       |
| Other expenses                         | 13         |                    | 15           |       |
|  | <u>178</u> | (72)               | <u>236</u>   | (95)  |
| GROSS MARGIN                           | <u>772</u> | (312)              | <u>844</u>   | (342) |

## Stubble to Stubble Arable Operations

The costs of stubble to stubble operations for winter wheat, winter barley, spring barley and winter oilseed rape are illustrated below. These calculations should be adapted and adjusted for site specific circumstances.

Assumptions:

- Yield data taken from crop gross margins – See Arable section.
- All straw is assumed to be baled.
- Contractors assumed to undertake all cultivation, sowing, crop maintenance, harvesting and carting to store. See Labour and Machinery section for contractor costs.
- Fuel cost itemised separately to contractors charges. Machinery fuel use (l/ha) and fuel cost – see Labour and Machinery section.
- Drying costs based on costs – Labour and Machinery section .

|                               | Winter<br>wheat | Winter<br>barley | Spring<br>barley | Winter<br>OSR |
|-------------------------------|-----------------|------------------|------------------|---------------|
| Yield - grain (t /ha)         | 8.0             | 7.5              | 5.5              | 4.0           |
| Yield - straw (t /ha)         | 4.2             | 4.1              | 2.9              | -             |
| Grain MC at harvest (%)       | 18              | 17               | 15               | 10            |
|                               | <b>£/ha</b>     |                  |                  |               |
| <b>Cultivation costs</b>      |                 |                  |                  |               |
| <i>Plough and cultivate</i>   | 138             | 138              | 138              | 138           |
| <i>Sow</i>                    | 42              | 42               | 42               | 42            |
| <i>Roll and destone</i>       | 23              | 23               | 23               | 23            |
| <i>Spray</i>                  | 77              | 61               | 46               | 61            |
| <i>Fertilise</i>              | 37              | 25               | 25               | 25            |
| <i>Fuel</i>                   | 53              | 51               | 50               | 51            |
|                               | 370             | 340              | 323              | 340           |
| <b>Harvest costs</b>          |                 |                  |                  |               |
| <i>Harvest</i>                | 109             | 109              | 109              | 101           |
| <i>Bale/stack</i>             | 83              | 81               | 57               | -             |
| <i>Carting</i>                | 8               | 12               | 8                | 4             |
| <i>Dry grain</i>              | 61              | 43               | 10               | 15            |
| <i>Fuel</i>                   | 17              | 15               | 13               | 9             |
|                               | 277             | 259              | 198              | 129           |
| <b>Total cost (£/ha)</b>      | <b>647</b>      | <b>599</b>       | <b>521</b>       | <b>469</b>    |
| <b>Total cost (£/ac)</b>      | <b>262</b>      | <b>242</b>       | <b>211</b>       | <b>190</b>    |
| <b>Cost per t grain (£/t)</b> | <b>81</b>       | <b>80</b>        | <b>95</b>        | <b>117</b>    |

## Equivalent Grain Weights at Varying Moisture Contents

The formula for converting wet grain weight to dry grain weight is:

$$\text{Weight loss} = \frac{W_1 (M_1 - M_2)}{100 - M_2}$$

where:  $W_1$  = starting weight of grain.  
 $M_1$  = starting moisture of grain.  
 $M_2$  = final moisture of grain.

*This formula accounts only for weight change due to moisture loss only.*

| 100t at<br>Moisture<br>Content % | Final moisture content % |        |       |        |       |        |       |       |       |
|----------------------------------|--------------------------|--------|-------|--------|-------|--------|-------|-------|-------|
|                                  | 20                       | 19     | 18    | 17     | 16    | 15     | 14    | 13    | 12    |
|                                  | Dried grain - t          |        |       |        |       |        |       |       |       |
| 35                               | 81.25                    | 80.25  | 79.27 | 78.31  | 77.38 | 76.47  | 75.58 | 74.71 | 73.86 |
| 33                               | 83.75                    | 82.72  | 81.71 | 80.72  | 79.76 | 78.82  | 77.91 | 77.01 | 76.14 |
| 31                               | 86.25                    | 85.18  | 84.15 | 83.13  | 82.14 | 81.18  | 80.23 | 79.31 | 78.41 |
| 29                               | 88.75                    | 87.65  | 86.59 | 85.54  | 84.52 | 83.53  | 82.56 | 81.41 | 80.68 |
| 27                               | 91.25                    | 90.12  | 89.02 | 87.95  | 86.90 | 85.88  | 84.88 | 83.91 | 82.95 |
| 25                               | 93.75                    | 92.59  | 91.46 | 90.36  | 89.29 | 88.24  | 87.21 | 86.21 | 85.22 |
| 23                               | 96.25                    | 95.06  | 93.90 | 92.77  | 91.67 | 90.59  | 89.53 | 88.51 | 87.50 |
| 21                               | 98.75                    | 97.53  | 96.34 | 95.18  | 94.05 | 92.94  | 91.86 | 90.80 | 89.77 |
| 19                               | -                        | 100.00 | 98.78 | 97.59  | 96.43 | 95.30  | 94.19 | 93.10 | 92.41 |
| 17                               | -                        | -      | -     | 100.00 | 98.81 | 97.65  | 96.51 | 95.40 | 94.32 |
| 15                               | -                        | -      | -     | -      | -     | 100.00 | 98.84 | 97.70 | 96.59 |

Further information on storage requirements for grain storage and the costs of grain storage are found within the Land and Buildings section, and costs of grain drying within the Labour and Machinery section.

## Futures and Options Markets

The futures markets offer a means to manage price risk in a wide range of agricultural commodities. In the UK, the most relevant markets are the UK LIFFE feed wheat futures ([www.theice.com](http://www.theice.com)) and the Paris European Rapeseed futures and Milling Wheat futures ([www.euronext.com](http://www.euronext.com)). Contracts for futures (forward prices) and options (price insurance) are available in both of these markets. Further details on the market, lists of registered brokers and how to trade can be found at the website above.

On a global basis, the most important agricultural futures market is the Chicago Board of Trade which offers contracts on wheat, maize, oats, soyabeans, soyameal and others, see [www.cmegroup.com](http://www.cmegroup.com). AHDB Cereals and Oilseeds has detailed market information on their website and also provides a guide to price risk management, futures and options.

See: <https://ahdb.org.uk/cereals-oilseeds-markets>