



RECOMMENDED LIST WINTER WHEAT 2003

MARKET OPTIONS AND GRAIN QUALITY

| | P2 C * | | | | P1 C P1 P2 * | | | | P1 P1 C C | | | | P2 C P1 * * * | | | | | | | | | | | | | | |
|--|---------------|---------|----------|----------|---------------|--------|-------------|----------|-----------|-----------|---------------|-------|---------------|---------|--------|--------|---------------|--------|--------|--------|----------|----------|----------|---------|--------|----------------|--|
| | Xi19 | Malacca | Shamrock | Hereward | Einstein | Option | Scorpion 25 | Solstice | Charger | Solissons | Robigus | Deben | Wizard | Consort | Claire | Riband | Access | Tanker | Biscay | Napier | Savannah | Richmond | Madrigal | Equinox | Buchan | Average LSD 5% | |
| End-use group | Nabim Group 1 | | | | Nabim Group 2 | | | | | | Nabim Group 3 | | | | | | Nabim Group 4 | | | | | | | | | | |
| Scope of recommendation | UK | UK | UK | UK | UK | UK | East | UK | UK | South | UK | UK | East | UK | UK | North | UK | UK | UK | UK | UK | UK | North | UK | UK | North | |
| UK treated yield as % control (10.3 t/ha) | 101 | 97 | 93 | 90 | 103 | 102 | 100 | 100 | 97 | 88 | 104 | 103 | 101 | 100 | 100 | 98 | 103 | 103 | 103 | 103 | 103 | 102 | 99 | 98 | 98 | 3.0 | |
| Main market options (The specific attributes of varieties are different so, whenever possible, varieties should not be mixed in store) | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| UK bread-making | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | | | | | | | | | | | | | | | | | |
| UK biscuit, cake-making | | | | | | | | | | | Y | Y | Y | Y | Y | Y | | | | | | | | | | | |
| UK starch/ distilling | | | | | | | | | | | (Y) | (Y) | (Y) | Y | Y | Y | | | | | | | | | | | |
| BCE Export bread-making * | (Y) | Y | (Y) | Y | (Y) | (Y) | (Y) | Y | Y | Y | | | | | | | | | | | | | | | | | |
| BCE Export blending * | (Y) | Y | (Y) | Y | (Y) | (Y) | (Y) | Y | Y | Y | (Y) | (Y) | (Y) | Y | Y | Y | | | | | | | | | | | |
| BCE Export biscuit flour * | | | | | | | | | | | (Y) | | (Y) | Y | Y | Y | | | | | | | | | | | |
| Year first listed | 02 | 99 | 99 | 91 | 03 | 01 | 03 | 02 | 97 | 95 | 03 | 01 | 03 | 95 | 99 | 89 | 02 | 01 | 01 | 00 | 98 | 03 | 97 | 97 | 99 | | |
| Grain quality | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Endosperm texture | Hard | Hard | Hard | Hard | Hard | Hard | Hard | Hard | Hard | Hard | Soft | Soft | Soft | Soft | Soft | Soft | Hard | Hard | Hard | Hard | Hard | Hard | Soft | Hard | Soft | | |
| Protein content (%) | 11.7 | 12.1 | 12.5 | 13.1 | 11.8 | 11.8 | 11.9 | 12.1 | 12.0 | 12.8 | 11.3 | 11.1 | 11.6 | 11.5 | 11.6 | 11.4 | 11.0 | 11.5 | 11.4 | 11.4 | 11.0 | 11.6 | 11.7 | 11.5 | 11.5 | 0.21 | |
| Hagberg falling number | 292 | 312 | 233 | 257 | 270 | 277 | 305 | 266 | 223 | 259 | 191 | 204 | 222 | 224 | 242 | 193 | 179 | 258 | 285 | 153 | 229 | 254 | 200 | 214 | 251 | 17.5 | |
| Specific weight (kg/hl) | 76.1 | 75.6 | 78.9 | 79.5 | 77.4 | 78.7 | 77.6 | 78.1 | 76.0 | 78.8 | 77.0 | 76.4 | 77.4 | 77.3 | 77.2 | 75.3 | 76.1 | 75.7 | 77.3 | 75.9 | 77.1 | 78.9 | 77.3 | 74.3 | 78.4 | 0.60 | |
| 1000 grain weight (g) | 52.1 | 46.2 | 45.7 | 48.9 | 50.6 | 47.8 | 51.1 | 51.2 | 47.3 | 45.9 | 45.6 | 53.7 | 51.5 | 50.4 | 48.8 | 54.0 | 51.2 | 54.1 | 54.3 | 54.3 | 56.2 | 50.2 | 48.9 | 54.6 | 49.8 | 1.62 | |
| Zeleny volume | 41.9 | 47.0 | 54.1 | 52.4 | (39.9) | 46.7 | (49.5) | 44.5 | 44.8 | 55.4 | (24.7) | 26.1 | (28.7) | 21.5 | 21.5 | 15.6 | 17.2 | 23.4 | 25.5 | 21.9 | 21.6 | 42.5 | 17.8 | 23.4 | 18.3 | 4.8 | |
| Chopin alveograph W | 170 | 203 | 177 | 219 | 164 | 181 | 195 | 178 | 165 | 293 | 90 | 116 | 150 | 102 | 95 | 71 | 62 | 77 | 102 | 71 | 81 | 170 | 58 | 80 | 81 | 20.4 | |
| Chopin alveograph P/L | 0.8 | 0.9 | 0.3 | 0.6 | 0.5 | 1.5 | 0.7 | 0.8 | 0.5 | 0.8 | 0.3 | 0.8 | 0.5 | 0.3 | 0.3 | 0.5 | 1.6 | 1.7 | 1.2 | 1.2 | 2.0 | 1.2 | 0.3 | 0.8 | 0.6 | 0.24 | |

P1, P2 first and second year of recommendation

C = Yield control

(Y) = May be suited to that market

* Variety no longer in trials

Y = Suited to that market

? = Further information required

Average LSD 5%. Varieties that are more than one LSD apart are significantly different at the 5% confidence level.

* Table updated July 2003 to show latest market options from HGCA Wheat and Barley Exports - The Growers' Guide



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YIELD, AGRONOMY AND DISEASE RESISTANCE

P2 C * P1 C P1 P2 * P1 P1 C C P2 C P1 * * *

| | X19 | Malacca | Shamrock | Hereward | Einstein | Option | Scorpion 25 | Solstice | Charger | Soissons | Robigus | Deben | Wizard | Consort | Claire | Riband | Access | Tanker | Biscay | Napier | Savannah | Richmond | Madrigal | Equinox | Buchan | Average LSD 5% | |
|--|---------------|---------|----------|----------|---------------|--------|-------------|----------|---------|----------|---------------|-------|--------|---------|--------|--------|---------------|--------|--------|--------|----------|----------|----------|---------|--------|----------------|--|
| End-use group | Nabim Group 1 | | | | Nabim Group 2 | | | | | | Nabim Group 3 | | | | | | Nabim Group 4 | | | | | | | | | | |
| Scope of recommendation | UK | UK | UK | UK | UK | UK | East | UK | UK | South | UK | UK | East | UK | UK | North | UK | UK | UK | UK | UK | UK | North | UK | North | | |
| Fungicide treated grain yield as % treated control | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| United Kingdom (10.3 t/ha) | 101 | 97 | 93 | 90 | 103 | 102 | 100 | 100 | 97 | 88 | 104 | 103 | 101 | 100 | 100 | 98 | 103 | 103 | 103 | 103 | 103 | 102 | 99 | 98 | 98 | 3.0 | |
| North region (9.5 t/ha) # | 103 | 101 | 95 | 91 | 107 | 107 | 98 | 103 | 100 | 91 | 108 | 108 | 103 | 105 | 102 | 105 | 109 | 109 | 105 | 107 | 109 | 106 | 105 | 101 | 102 | 3.8 | |
| Dry (East) region (10.2 t/ha) # | 104 | 98 | 96 | 92 | 104 | 102 | 105 | 101 | 99 | 90 | 107 | 105 | 104 | 101 | 102 | 99 | 105 | 105 | 105 | 105 | 103 | 104 | 101 | 102 | 100 | 2.8 | |
| Wet (West) Region (9.8 t/ha) # | 104 | 99 | 94 | 93 | 107 | 103 | 104 | 103 | 100 | 91 | 107 | 106 | 103 | 102 | 104 | 100 | 105 | 105 | 106 | 105 | 104 | 106 | 101 | 101 | 100 | 3.0 | |
| Untreated grain yield as % treated control in comparable trials | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| United Kingdom | 74 | 72 | 72 | 72 | 79 | 76 | 74 | 76 | 73 | 68 | 82 | 79 | 69 | 64 | 76 | 60 | 73 | 71 | 75 | 75 | 68 | 77 | 69 | 70 | 72 | | |
| Agronomic features | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Resistance to lodging without PGR + | 5 | 7 | 8 | 8 | 7 | 6 | 6 | 8 | 3 | 6 | 7 | 4 | 8 | 8 | 7 | 8 | 7 | 8 | 5 | 7 | 7 | 7 | 9 | 8 | 9 | 1.5 | |
| Resistance to lodging with PGR | 8 | 8 | 9 | 9 | 8 | 7 | 8 | 9 | 6 | 7 | 8 | 6 | 8 | 9 | 7 | 8 | 8 | 9 | 6 | 7 | 8 | 9 | 9 | 9 | 9 | 1.3 | |
| Height without PGR (cm) | 97 | 86 | 84 | 89 | 86 | 89 | 96 | 95 | 85 | 88 | 90 | 95 | 82 | 87 | 91 | 91 | 83 | 83 | 91 | 85 | 88 | 86 | 85 | 81 | 85 | 1.2 | |
| Ripening (days +/- Claire, -ve = early) | 0 | -1 | +1 | +1 | 0 | +1 | 0 | 0 | -1 | -3 | +1 | +1 | +2 | +2 | 0 | +1 | +1 | +2 | 0 | +1 | +2 | 0 | +2 | +1 | +2 | 0.7 | |
| Resistance to sprouting | 7 | 6 | 4 | 5 | - | 8 | - | 8 | 2 | 8 | - | 5 | - | 5 | 4 | 6 | 5 | 7 | 6 | 5 | 6 | 6 | 6 | 4 | 6 | 2.0 | |
| Disease resistance | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Mildew | 8 | 7 | 2 | 5 | 7 | 4 | 8 | 5 | 8 | 8 | 9 | 6 | 8 | 6 | 4 | 7 | 7 | 7 | 6 | 7 | 8 | 6 | 7 | 5 | 7 | 1.0 | |
| Yellow rust | 9 | 9 | 8 | 5 | 6 | 9 | 9 | 9 | 8 | 7 | 3 | 9 | 4 | 5 | 9 | 6 | 3 | 5 | 4 | 3 | 5 | 8 | 3 | 4 | 3 | (1.1) | |
| Brown rust | 6 | 7 | 4 | 7 | 5 | 5 | 6 | 5 | 5 | 3 | 9 | 5 | 9 | 4 | 8 | 3 | 9 | 6 | 9 | 9 | 8 | 9 | 9 | 9 | 9 | (1.5) | |
| <i>Septoria nodorum</i> | 5 | 7 | 7 | 7 | 6 | 6 | 5 | 6 | 6 | 5 | 8 | 7 | 6 | 5 | 7 | 4 | 6 | 5 | 7 | 6 | 5 | 6 | 5 | 6 | 5 | (2.5) | |
| <i>Septoria tritici</i> | 6 | 6 | 6 | 6 | 5 | 5 | 5 | 6 | 5 | 6 | 7 | 6 | 5 | 4 | 7 | 3 | 5 | 4 | 5 | 5 | 4 | 5 | 5 | 4 | 5 | (0.8) | |
| Eyespot | 5 | 4 | 3 | 5 | 7 | 6 | 5 | 4 | 4 | 3 | 5 | 6 | 8 | 7 | 7 | 6 | 4 | 7 | 5 | 4 | 5 | 3 | 7 | 6 | 5 | (3.3) | |
| <i>Fusarium</i> ear blight | 5 | 6 | 6 | 5 | 6 | 6 | 6 | 7 | 4 | 7 | 6 | 6 | 6 | 6 | 7 | 5 | 5 | 5 | 8 | 5 | 6 | 6 | 6 | 5 | 6 | (3.5) | |

On the 1-9 scales high figures indicate that a variety shows the character to a high degree

C = Yield control

Average LSD 5%. Varieties that are more than one LSD apart are significantly different at the 5% confidence level. () bracketed LSDs are approximate

+ The lodging scale without PGR has been extended from that used previously so that Charger moves from 5 to 3.

The regional yields include supplementary trials (1997 to 2001) which may not have received the full fungicide protocol. Comparisons of variety performance across regions are not valid.



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SUPPLEMENTARY DATA

| | P2 C * | | | | P1 C | | | | P1 P2 * | | | | P1 | | | | P1 C C | | | | P2 | | | | C | | | | P1 * * * | | | | | | | |
|---|---------------|---------|----------|----------|---------------|--------|-------------|----------|---------------|----------|---------|-------|---------------|---------|--------|--------|--------|--------|--------|--------|----------|----------|----------|---------|--------|-------------|--|--|----------|--|--|--|--|--|--|--|
| | X119. | Malacca | Shamrock | Hereward | Einstein | Option | Scorpion 25 | Solstice | Charger | Soissons | Robigus | Deben | Wizard | Consort | Claire | Riband | Access | Tanker | Biscay | Napier | Savannah | Richmond | Madrigal | Equinox | Buchan | Average LSD | | | | | | | | | | |
| End-use group | Nabim Group 1 | | | | Nabim Group 2 | | | | Nabim Group 3 | | | | Nabim Group 4 | | | | | | | | | | | | | | | | | | | | | | | |
| Scope of recommendation | UK | UK | UK | UK | UK | UK | East | UK | UK | South | UK | UK | East | UK | UK | North | UK | UK | UK | UK | UK | UK | North | UK | UK | North | | | | | | | | | | |
| Breeder/ Agent | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Breeder | Adv | CPB | Adv | Mon | Nick | Mon | Adv | Adv | Mon | Depr | CPB | Nick | CPB | Mon | Nick | Mon | CPB | Els | CPB | Mon | Adv | Ceb | Mon | CPB | Nick | | | | | | | | | | | |
| Agent | Adv | CPB | Adv | Mon | Nick | Mon | Adv | Adv | Mon | Els | CPB | Nick | CPB | Mon | Nick | Mon | CPB | Els | CPB | Mon | Adv | Ceb | Mon | CPB | Nick | | | | | | | | | | | |
| Annual yield as % control | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1998 treated (10.2 t/ha) | - | 97 | 90 | 88 | - | 101 | - | - | 96 | 88 | - | 101 | - | 102 | 98 | 99 | - | 104 | 104 | 101 | 103 | - | 99 | 98 | 96 | 2.7 | | | | | | | | | | |
| 1999 treated (11.2 t/ha) | 105 | 97 | 93 | 89 | - | 100 | - | 101 | 97 | 85 | - | 104 | - | 100 | 101 | 96 | 106 | 102 | 101 | 102 | 102 | 103 | 101 | 99 | 98 | 2.5 | | | | | | | | | | |
| 2000 treated (11.2 t/ha) | 102 | 97 | 91 | 88 | 100 | 100 | 102 | 98 | 96 | 89 | 104 | 102 | 101 | 100 | 100 | 102 | 103 | 104 | 99 | 103 | 103 | 100 | 101 | 97 | 2.5 | | | | | | | | | | | |
| 2001 treated (9.4 t/ha) | 103 | 96 | 95 | 94 | 103 | 104 | 103 | 101 | 98 | 91 | 106 | 106 | 103 | 99 | 100 | 98 | 103 | 103 | 105 | 104 | 101 | 103 | 99 | 100 | 102 | 2.8 | | | | | | | | | | |
| 2002 treated (10.1 t/ha) | 100 | 97 | 95 | 94 | 105 | 103 | 99 | 100 | 99 | 89 | 105 | 103 | 101 | 98 | 100 | 97 | 102 | 102 | 106 | 103 | 102 | 104 | 98 | 97 | 2.3 | | | | | | | | | | | |
| Rotational position | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| First cereal treated (10.6 t/ha) | 102 | 96 | 93 | 90 | 103 | 101 | 101 | 99 | 96 | 88 | 105 | 103 | 101 | 100 | 101 | 98 | 103 | 103 | 103 | 102 | 102 | 102 | 100 | 101 | 98 | 2.5 | | | | | | | | | | |
| Second and more treated (9.1 t/ha) | 100 | 97 | 93 | 91 | 104 | 101 | 98 | 100 | 98 | 90 | 101 | 104 | 101 | 100 | 99 | 98 | 103 | 103 | 102 | 104 | 103 | 102 | 98 | 96 | 98 | 3.5 | | | | | | | | | | |
| Sowing date (most trials were sown after 1 Oct) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Before Oct treated (9.7 t/ha) | - | 97 | 93 | 90 | - | - | - | - | 98 | 88 | - | - | - | 98 | 101 | 97 | - | - | - | 103 | 100 | - | 98 | 98 | 97 | 6.7 | | | | | | | | | | |
| Late Autumn treated (9.1 t/ha) | - | 96 | 93 | 91 | - | 100 | - | - | 99 | 92 | - | 105 | - | 99 | 101 | 97 | - | 102 | 104 | 101 | 103 | - | - | - | 4.2 | | | | | | | | | | | |
| Soil type (about 50% of trials are on medium soils) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Light soils treated (10.0 t/ha) | 101 | 96 | 92 | 89 | 103 | 102 | 101 | 98 | 97 | 87 | 105 | 105 | 101 | 100 | 100 | 99 | 103 | 102 | 103 | 102 | 101 | 101 | 99 | 100 | 98 | 3.6 | | | | | | | | | | |
| Heavy soils treated (10.1 t/ha) | 101 | 96 | 93 | 91 | 102 | 100 | 99 | 98 | 97 | 89 | 103 | 102 | 99 | 100 | 101 | 97 | 102 | 103 | 103 | 103 | 103 | 101 | 99 | 99 | 99 | 3.5 | | | | | | | | | | |
| Agronomic features | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Lodging % without PGR | 7.1 | 1.6 | 1.2 | 0.9 | 2.2 | 4.1 | 4.4 | 1.0 | 16.6 | 5.1 | 2.5 | 12.1 | 1.2 | 0.7 | 2.2 | 1.5 | 2.1 | 1.6 | 7.2 | 3.1 | 1.9 | 1.9 | 0.5 | 0.8 | 0.5 | | | | | | | | | | | |
| Lodging % with PGR | 1.5 | 0.8 | 0.3 | 0.3 | 0.9 | 2.3 | 0.9 | 0.3 | 5.0 | 2.9 | 1.3 | 6.4 | 0.9 | 0.5 | 1.9 | 0.8 | 1.0 | 0.5 | 5.3 | 1.9 | 1.1 | 0.2 | 0.4 | 0.4 | 0.3 | | | | | | | | | | | |

All yields are taken from treated trials receiving a full fungicide and PGR programme

Key to breeder/agent codes:

Adv = Advanta Seeds UK (www.advantaseeds.co.uk)

Ceb = Cebeco Seed Innovations Ltd (info@cebeco-seeds.co.uk)

CPB = CPB Twyford Ltd (www.cpb-twyford.co.uk)

Depr = Maison Florimond Desprez, France

Els = Elsoms Seeds Ltd (www.elsoms.com)

Mon = Monsanto, PBIC Seeds (www.monsanto-ag.co.uk)

Nick = Nickerson (UK) Ltd (www.nickersonuk.com)