

» In this Issue

Spring cereal variety recommendations for 2009

The Recommended List for 2009 is included along with descriptions of the varieties.

Update on the use of Aminopyralid

New guidelines are available on the use of aminopyralid.

Weed control in winter cereals

Products for weed control in winter cereals and guidelines on their use.

Seed potato management

Following a difficult season we provide guidance on how to manage seed stocks prior to planting.

Nutrient Management Training

This course is designed to help arable growers calculate nutrient requirements from RB209 while ensuring that nutrient calculations and records comply with the Nitrates Directive.

The course is divided into two sessions:

- Nutrient Management & Nitrates Directive records.
- Calculating crop nutrient requirements using the computer program.

If you are interested in attending a Nutrient Management meeting please contact your local Development Advisor.

Chemical (bagged) fertiliser applications

Arable farmers are reminded that fertilisers containing nitrogen (N) and phosphorous (P) must not be applied unless there is a crop requirement, taking account of soil fertility status and the supply of N and P from the application of organic manures.

Where growers wish to apply 'bagged' fertiliser containing N the fertility status based on soil type and previous cropping must first be established

This will indicate the Soil Nitrogen Supply index from which the type and rate of N fertiliser to be used can be determined.

Where growers wish to apply 'bagged' fertiliser containing P the fertility status of the field must first be established through a soil test

This will indicate the P index of soil on which the type and rate of P fertiliser to be used can be determined. Growers are expected to provide evidence of soil nutrient status if 'bagged' N or P fertiliser has been applied. **Growers, who continue as in the past to apply the same 'bagged' fertiliser programme to their cereals or potatoes, ignoring soil analysis, may well be in breach of the Nitrates Directive and they are putting their Single Farm Payment at risk.**

Soil sampling

Equipment with directions for use is available at your local DARD office. Fields need to be sampled every 4 years and the size of the area for one sample must not be more than 4 hectares. Samples can be left back to the DARD office where a charge of £9.50 including VAT will be collected.

Growers who attend the Nutrient Management course will have an opportunity to use the recently introduced CAFRE computer program which calculates the amount and type of fertiliser to apply to crops ensuring best value for money and compliance with Nitrates Directive.

Spring Cereal Variety Recommendations for 2009

The annual updating of the DARD Cereal Recommended List based on trials conducted by AFBI Crossnacreevy and part-funded by the Home Grown Cereals Authority is now available as a booklet and on the AFBI website (www.afbini.gov.uk).

There are two new additions to the spring barley Recommended List for 2009. **Concerto** and **Publican** both appear as provisional recommendations for the first time. **Concerto** gives outstanding grain yields and **Publican** is one of only two varieties that give very high straw yields. There are minor changes to the spring oat list and **Ascot** is now fully recommended for general use. In this article, the spring varieties on the 2009 DARD Cereal Recommended List for Northern Ireland are described, including some preliminary data on spring wheat grown in trial by AFBI in Northern Ireland.

Spring barley

There are some major changes to the spring barley recommended list.

Quench has been promoted and now tops the table as the highest yielding fully recommended variety, with a treated yield 3% higher than Westminster. **Quench** has short straw with quite good standing power and intermediate straw yields. It has grain that is smaller than most recommended varieties and it has low specific weight. **Quench** has very good resistance to mildew and quite good resistance to **Rhynchosporium**.

Westminster is still performing very well giving very high yields. It has good resistance to **Rhynchosporium** and mildew and has one of the highest specific weights on the recommended list. It is one of only two varieties on the list which gives very high straw yields and has quite good standing power although it can be prone to necking.

Waggon has been promoted to full recommendation and gives treated yields 1% higher than **Quench**. It is, however, recommended for special use due to its very poor resistance to **Rhynchosporium**. **Waggon** has strong straw with intermediate straw yields and has very large grain, although its specific weight is low.

Concerto is a new provisional recommendation that gives exceptionally high treated yields. It has large grain with average specific weight and is early to ripen. It has average standing power but very good resistance to necking. Its resistance to **Rhynchosporium** is quite poor though and its standing power is just average. Achieving high yields with this variety may require careful management with regard to disease control and straw strength.

Publican, the second new variety also has a very high yield. It has the highest untreated yield on the list which reflects its excellent disease resistance package. It has large grain with average specific weight. Its straw is medium in length with good standing power and, along with **Westminster**, is one of only two varieties on the list giving very high straw yields. Like **Westminster** it tends to ripen late.

Sweeney remains on the list as a provisional recommendation for a second year. This variety gives very high yields with very large grain but low specific weight. It has short straw with quite good standing power and intermediate straw yields. It has below average resistance to **Rhynchosporium**.

Three varieties, **Appaloosa**, **Cocktail** and **Riviera** have become outclassed due to falling yields in comparison to the newer varieties on the list.

Spring oats

Ascot has been promoted to fully recommended for general use, leading the table with a treated yield that is 5% higher than **Firth** which remains fully recommended. **Husky** enters its second year as provisionally recommended, with treated yields 2% lower than **Ascot**. All three varieties have similar grain quality with **Firth** having the highest kernel content and **Husky** having the highest specific weight. **Husky** also has the strongest straw and is early to ripen. **Atego** was removed from the list because of its very low untreated yields which were attributable to its very high susceptibility to mildew.

Yield of recommended spring varieties in AFBI variety trials (2004-08)

Variety	Status	Treated	Untreated
Spring barley (Mean of treated controls = 6.15 t/ha)			
Quench	G	107	92
Westminster	G	104	93
Doyen	G	103	88
Waggon	S	108	90
Concerto	P1	115	92
Publican	P1	105	94
Sweeney	P2	105	93
Appaloosa	O	101	84
Cocktail	O	101	83
Riviera	O	97	85
Spring oats (Mean of treated controls = 6.74 t/ha)			
Ascot	G	103	83
Firth	G	98	85
Husky	P2	101	84

G = fully recommended for general use; P2 = second year as provisionally recommended; P1 = first year as provisionally recommended; S = fully recommended for special use; O = becoming outclassed.

Spring wheat

In 2008, AFBI conducted a spring wheat trial to gain better local information on grain yields. The data presented are from one trial only and, in addition, 2008 was a particularly poor year. These two factors should be borne in mind when considering this data. There were ten varieties in trial and the average yield for the trial was 4.0 t/ha, ranging from a maximum of 4.4 t/ha to a minimum of 3.7 t/ha. For comparative purposes, the average yield for the spring barley trial at the same location was 4.6 t/ha. These low yields are a reflection of the poor growing and harvest conditions in 2008.

Treated yield of spring wheat varieties in AFBI yield trial 2008

Variety	Yield t/ha in Northern Ireland	Yield as % of controls in Northern Ireland
Belvoir	4.27	109
Granary	4.22	108
Byron	4.07	104
Paragon	4.00	102
Tybalt	3.97	101
Trappe	3.96	101
Raffles	3.91	100
Ashby	3.79	97
Buckingham	3.73	95
Zircon	4.36	111

Mean of controls (Paragon, Tybalt and Ashby) = 3.92 t/ha.

Belvoir's yield of 109% in Northern Ireland is equivalent to its HGCA yield in the 2009 HGCA Recommended List. From this first trial, indications are that this variety performs well in Northern Ireland. There was little straw damage apart from slight brackling in a few varieties, probably because the straw was very short. Traces of yellow rust were recorded in **Trappe** and **Granary** and BYDV was found present in all varieties at >5%, **Byron** being worst affected at 15%. **Zircon** is specifically recommended by the HGCA as a 'white-grained' wheat, and in their more extensive data sets only yields at 102% of treated controls. The high yield of 111% in the AFBI trial is very tentative. A more comprehensive data set on spring wheat varieties can be found at www.hgca.com. Spring wheat trials will be continuing in Northern Ireland.

The DARD Cereal Recommended List booklets for Northern Ireland are available from your local DARD Development Office, or by contacting the Plant Testing Station at Crossnacreevy on 028 9054 8000 or at www.afbini.gov.uk. Further information on cereal varieties and their performance in Northern Ireland can be obtained from AFBI Crossnacreevy and the Crops Development Branch at CAFRE (Greenmount Campus).

Precautions when using Aminopyralid (Forefront, Pharaoh and Bannish) herbicides

Farmers looking to dispose of farmyard manures and slurries over the winter months need to think about what may have gone into it, where it is going and whether any herbicide used last summer could affect crops next year.

This is also important for potato and vegetable growers who rent land under conacre agreements, which may have either been treated with a herbicide or manures and slurries containing herbicide residues.

Aminopyralid has been granted provisional authorisation for use as a herbicide/weed killer to control broad-leaved weeds on grassland, following an evaluation of extensive data by the Pesticides Safety Directorate (PSD). The substance can remain in grass from treated land and pass into the manure of grazing livestock, where it remains tightly bound to the plant material until it decomposes. Similarly the substance can remain in grass fed as hay or silage to housed cattle, again passing through the animal into the manure.

If manure is applied to soil or crops before the plant material in the manure has fully decomposed, susceptible crops may be damaged. These include peas, beans and other legumes, carrots and parsnips, potatoes and tomatoes, and lettuce and similar crops.

As the plant material in the manure breaks down it releases the aminopyralid, which is likely to be at its highest level in the soil about 3 weeks after applying the manure. However, soil bacteria then break down the aminopyralid so that susceptible plants may start to recover and grow again. Most of the aminopyralid residue in the soil should have been broken down after 6 months if the manure has been fully incorporated (rotavated/mixed) into the soil to aid decomposition. As with all plant protection products, **users should always read and follow the label instructions. This is a statutory requirement.**

The warning comes as part of a stewardship programme led by Dow AgroSciences working alongside a range of organisations including the Ulster Farmers Union.

Although we have had no recorded problems in Northern Ireland, it is important to be aware of the issue and ask the right questions of your conacre provider, if in doubt check with your advisor/agronomist or call the Dow Hotline 0800 680 8899 or visit www.dowagro.com/uk

Herbicide update for cereals

Both IPU and trifluralin lose their approvals on 30/06/09 and 20/03/09 respectively. If growers have IPU either as a straight or as mixtures, these products can still be used until the 30/06/09. The maximum application rate is 1.5kg/ha of active ingredient rather than the currently approved rates of up to 2.5kg/ha or active ingredient.

Improving the performance of residual herbicides

When applying any herbicides to winter crops this season the following guidelines should help to improve the efficacy of your herbicides:

- Older herbicide products such as IPU are taken up by plant roots.
- Many of the current products have a stronger reliance in shoot uptake and therefore the impact of nozzle type; spray distribution and seedbed quality play a much more important part in achieving effective weed control.

For late drilled winter barley or wheat into cloddy seed beds it may be better to leave weed control until late winter or early spring. There is often a weather window in February or early March when residuals can still be applied.

Effect of Grass Weeds

Grass weeds compete with the crop for water, nutrients, space and light. They are often competitive as individual plants or produce so much seed that their populations increase rapidly to competitive levels.

Table 1: Relative competitiveness of grass weeds in winter wheat

Grass Weed	Approximate numbers/sq m required to give a 5% reduction in yield
Barren brome	40
Other Bromes	20 - 40
Annual meadow grass	Greater than 50
Rye-grasses	9
Wild Oats	5
Common couch-grass	15
Bents	15
Loose sikly-bent	15

However the thresholds for economic return are much lower as failure to control weeds such as wild oats will lead to problems in future seasons, and a zero threshold would be the best approach.

Grass weeds can act as hosts for some pests and diseases

- Meadow-grasses, couch-grass, wild-oats can host aphids
- Couch-grass can host Take-all
- Couch-grass can act as host for rusts, smuts, sooty moulds and wireworms

Management of grass weeds through husbandry

Where possible husbandry techniques should be the first method used to manage grass weeds due to the development of resistance to some herbicides and reduced number of herbicides available for weed control.

Husbandry methods that will assist weed control in conjunction with appropriate herbicide include:

Crop Rotation

- Alternate spring and winter sow crops to reduce the impact of autumn germinating weeds such as the bromes
- Grass breaks for two or more years reduces the seed bank of annual weeds
- Use break crops such as maize, oil seed rape, vegetables, and potatoes that allow the use of alternative herbicides that can be more effective on certain weeds

Time of sowing

- In fields where grass weeds are becoming troublesome, consider delaying sowing which will significantly reduce the germination of autumn grass weeds
- Delayed sowing in fields where weed populations are high allows the use of a stale seedbed which can offer a much cheaper method of weed control
- Delaying ploughing allows birds and soil fauna to graze the seeds and reduces the weed bank for future years

Crop Competition

- A well established crop of winter oats and barley can shade out late emerging grass weeds more effectively than wheat
- Taller varieties with larger leaves will tend to be more effective in reducing grass weed growth
- Increasing sowing rates improve the crops competitiveness against weeds

To achieve the optimal use of current herbicides and avoid herbicide resistance development in grass weeds:

1. Rotate spring/autumn crops
2. Include break crops with different herbicides
3. Plough routinely
4. Delay autumn sowing
5. Use stale seedbed and fallows to reduce seed banks
6. Use herbicides from different chemical families and in mixtures and sequences.

Table 2 provides post emergence herbicides available for grass weed control and their effect on some autumn-emerging broad-leaved weeds, (this list is not exhaustive and should only be used as a guide).

Table 2 below outlines the activity of cereal herbicides used for grass weeds control and the effect on board-leaved weeds (Growth stage of weeds and estimated levels of activity * > ***)

Post Emergence treatments	Barren / sterile brome	Sterile Brome and Meadow Brome	Loose Silky Bent	Common Couch - grass	Wild Oats	Annual Meadow Grass	Rough Meadow Grass	Residual activity	Cleavers	Common Chickweed	Common Field Speedwell	Fumitroy	Common Poppy	Crane's Bills	Forget-me-not	Field Pansey	Groundsel	Ivy-leaved Speedwell	Mayweed	Shepherd's Purse	Read Dead Nettle	Fool's Parsley
Clodinafop-propargyl	-	-	-	-	*** 11->	-	** 11->	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dicolfop-methyl + fenoxaprop-p-ethyl	-	-	-	-	*** 12-30	-	-	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DFF + flupyrsulfuron methyl	-	-	-	-	-	*	*	Few Weeks	-	S	S	-	S	S	S	S	S	M	S	S	S	-
Fenoxaprop-P-ethyl	-	-	-	-	*** 12-39	-	-	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Flupyrsulfuron-methyl + thifensulfuron-methyl	-	-	-	-	-	-	-	Few Weeks	M	S	M	-	S	S	S	M	S	M	S	S	S	-
Fuxioxazin	-	-	*** 11-12	-	-	** 10-13	-	Few Weeks	S	S	S	S	S	S	S	S	S	S	S	S	S	-
Iodosulfuron-methyl-sodium	-	-	-	-	-	** 11-30	-	Few Weeks	M	S	S	-	-	-	-	M	-	-	S	-	S	-
Iodosulfuron-methyl-sodium + mesosulfuron-methyl	** 11-31	** 11-31	?	-	*** 11-39	*** 11-31	*** 11-31	Few Weeks	-	S	-	-	-	-	-	-	-	-	S	-	-	-
Pinoxaden	-	-	*** 11-31	-	*** 11-39	-	** 11-39	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Propoxycarbazone-ethyl	** 11-31	* 11-31	*** 11-31	** 11-31	-	-	-	None	-	-	-	-	-	-	-	-	-	-	-	M	-	-
Sulfosulfuron	** 29-32	* 21-30	*** 12-35	-	-	-	-	None	S	M	-	-	-	-	-	-	-	S	S	S	S	-
Tralkoxydim	-	-	-	-	*** 12-31	-	-	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 3: The range of products for the active ingredients listed in Table 2 for post emergence weed control.

Active Ingredient	Products available
Clodinafop-propargyl	Topik (Syngenta)
Dicolfop-methyl + fenoxaprop-p-ethyl	Corniche/Tigress Ultra (Bayer)
DFF + flupyrsulfuron-methyl	Absolute (DuPont)
Fenoxaprop-P-ethyl	Cheetah Super (Bayer) Triumph (Bayer)
Flupyrsulfuron-methyl + thifensulfuron-methyl	Lancer (Headland) Lexus Millenium (DuPont)
Fumioxazin	Digital/Guillotine (Interfarm)
Iodosulfuron-methyl-sodium	Hussar (Bayer)
Iodosulfuron-methyl-sodium + mesosulfuron-methyl	Atlantis (Bayer) Pacifica (Bayer)
Pinoxaden	Axial (Syngenta)
Propoxycarbaxone-ethyl	Attribute (Bayer)
Sulfosulfuron	Monitor (Monsanto) Safeguard (Agriguard)
Tralkoxydim	Grasp (Syngenta) Strimma (Makhteshim Agan)

Potatoes

Seed Potato Management - more important than ever for 2009

Know the risks

With a high incidence of wet rots at harvest from blight, black leg and pink rot it is essential that all seed stocks are hot boxed prior to sale or planting this season.

Hot box seed stocks

Take a random sample of 50 tubers per 2 tonne batch and place in a black plastic bag with a few sheets of damp kitchen paper. Loosely tie the end of the bag to help prevent the paper drying out and allow some air to enter. Place the bag in a warm room (e.g. hot press or boiler house) for 10 -14 days to promote the development of any rots and dormancy break.

After 7 days check the bags for signs of soft rots occurring, then at 14 days, open the bag to assess seed quality, look for at least one strong sprout per tuber, any further tuber soft rot development and those that have not produced any sprouts. In a good sample there should be no more than two percent rots and at least 98% of tubers are expected to produce strong sprouts.

Even when a low level of rots (<2%) develop after the hot box test, extra care must be taken to ensure further rotting is kept to a minimum.

Don't handle cold potatoes

One of the main entry points for disease is through broken skin caused by damage. This could be more of a problem this year following the cold weather experienced after Christmas. Potatoes graded or handled below 8°C are more susceptible to impact damage, splitting and bruising. Wounds will be slower to heal and act as open entry points for disease particularly gangrene and dry rot.

Minimise damage

To minimise tuber damage and increase the rate of wound healing it is recommended that crops held at 6°C are warmed up to 10°C before grading. Keeping seed crops warm and ventilated for 2-3 days after grading will allow any fresh damage to heal before returning to cooler storage.

Manage dry rot and gangrene

If seed is put back into cold store immediately after grading, cold air passing over open wounds will increase the chance of **gangrene** infection particularly in susceptible varieties such as Premiere, Sante, Desiree and Cultra.

Susceptibility to **dry rot** infection increases during the winter, especially from December to January due to the development of **dry rot** spores on the tuber surface. Grading during this time, especially where buds are removed leaving an open wound, increases disease risk as spores are easily transferred from tuber to tuber. It is critical to ensure that your store is clean, crops are warmed prior to grading and extra care is taken when grading from January-March when tubers are at their most sensitive. Susceptible varieties include Maris Piper, Desiree, Navan and Pentland Squire.

Application of a seed treatment after grading should be more beneficial this season as the wet harvest resulted in a lot of soil adhering to the surface of the potatoes making the efficient application of seed treatments difficult. By now the soil should have dried and grading will help remove it from the surface of the tubers exposing a clean skin allowing for optimum fungicide coverage.

Fungicide treatments containing imazalil e.g. Fungazil 100 SL or Magnate 100 SL, imazalil and thiabendazole e.g. Storite Super, or thiabendazole e.g. Storite Excel will help to control gangrene and dry rot infections in seed potatoes. Treatments should be applied to dormant tubers immediately after grading as they must penetrate the damaged skin and fight infection before wound healing occurs.

Where a liquid treatment has been applied, ensure the tubers are thoroughly dried before returning to storage.

Six points for successful management of seed destined for cold storage prior to planting

1. Unless seed is ordered for delivery just prior to planting, place the seed in a clean ventilated store with temperatures around 10°C for up to 7 days to allow wounds to heal.
2. Ventilation should be sufficient to remove any condensation accumulated during transport and prevent further condensation as a result of increased metabolism and heat production.
3. Positive ventilation is ideal but if this is not available then good air circulation is essential.
4. Air movement through bags is very difficult to achieve. If seed is delivered in bulk or in bags it should be placed in boxes or seed trays, keeping damage to a minimum, before ventilation and wound healing.
5. After wound healing and ventilation, seed may be placed in cold store until required.
6. Placing seed straight into cold store is not advisable

Always consult your buyer protocols before using chemicals.

All previous editions of Crop Monitor and Crop Management Notes are available on-line at www.ruralni.gov.uk/crops.

Compiled by:

Malachy Mason

Crops Technologist
Greenmount Campus
College of Agriculture Food and Rural Enterprise
Tel: 028 9442 6742 or
Email: malachy.mason@dardni.gov.uk

Contributions by:

Dr Lisa Black and Dr Ethel White

AFBI Crossnacreevy

Crop Development Advisers can be contacted at the office, mobile or via email

Robin Bolton

Tel: 028 7772 1823 / 077 4896 7013 or
Email: robin.bolton@dardni.gov.uk

David Crawford

Tel: 028 9986 4358 / 078 9986 4358 or
Email: david.s.crawford@dardni.gov.uk

James Knox

Tel: 028 9442 6786 / 077 9661 4984 or
Email: james.knox@dardni.gov.uk

Edited by

Bill Simpson

Senior Crops Development Adviser
Greenmount Campus
Tel: 028 9442 6683 / 077 8810 8722 or
Email: bill.simpson@dardni.gov.uk