NICHINO

BACKUP FOR YOUR PRE-EMS

The UK's leading residual herbicide adjuvant for superior weed control

BackRow Max
ADJUVANT

FORMERLY INTERAGRO
THE ADJUVANT EXPERTS

www.nichino.uk

GETTING MORE
from your Pre-ems

With residual herbicide performance at risk from unpredictable weather and challenging application conditions, incorporating an adjuvant into the mix can be a valuable tool within your IPM strategy to help optimise herbicide performance and minimise resistance.

Keeping difficult grass and broad leaf weeds like black-grass at bay can feel like a never-ending battle. With herbicide efficacy having declined over recent years, many growers have turned to cultural control options like delayed drilling, as well as alternative options like adjuvants, to get the most from what chemistry they do have access to.

Residual herbicide adjuvants are designed to improve herbicide performance under various environmental conditions. They can help overcome challenges such as limited/heavy rainfall, suboptimal spraying conditions, or certain soil types that may otherwise hinder the efficacy of herbicides.

An effective residual herbicide adjuvant can both enhance herbicide performance and increase the safety of the application in adverse conditions, leading to more reliable control of weeds and improved crop establishment, whilst also safeguarding the environment.

STRENGTHENING PRE-EM PERFORMANCE
with BackRow Max®

Among the top-performing residual herbicide adjuvants available, is Nichino's BackRow Max – a specialist residual herbicide adjuvant that can be incorporated into the pre- and peri-emergence tank-mix to maximise performance – in all conditions.

Our advanced adjuvant formulation enhances the effectiveness and safety of your residual herbicides, ensuring even distribution, better retention, and less weeds emerging during the season.

PROLONGED PROTECTION
Achieve consistent, longer lasting protection in suboptimal seedbeds and spraying conditions.

ENHANCED ESTABLISHMENT
Prevent herbicides causing crop phytotoxicity.

SUSTAINABLE PRACTICES
Protect off-targets by reducing chemical movement to nearby fields and watercourses.

WHY FARMERS CHOOSE BACKROW MAX® TO SECURE THEIR FIELDS

BACKUP FOR YOUR PRE-EMS

When it comes to pre-emergence herbicides, you need a reliable backup that stands the test of time. BackRow Max is your partner in ensuring that your pre-ems deliver consistent, long-lasting weed control, no matter the conditions.

TAKES WEED CONTROL TO THE MAX

With proven abilities versus competitor adjuvants, and efficacy benefits with the latest herbicides, BackRow Max helps you push the performance of your pre-ems to the limit and take weed control to the max.

PEACE OF MIND

Feel the relief of cleaner fields, the pride in healthy crops and peace of mind in the knowledge that you're also doing your best by the environment.

OPTIMISED ESTABLISHMENT

ENHANCED COVERAGE

BackRow Max enhances residual herbicide targeting and coverage across the soil surface, creating a stronger barrier to weed emergence.

On-target application

35% less drifty droplets
Optimal droplet size

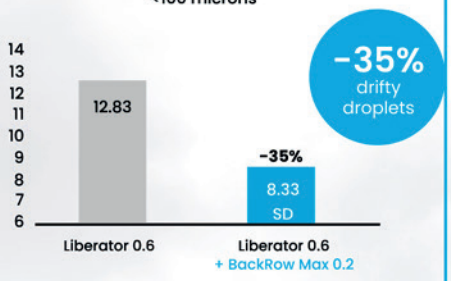
Pre-emergence herbicides are prone to drift which risks some parts of the field being under-dosed and other areas over-dosed with herbicide. Low drift nozzles whilst reducing drift, also create coarser spray droplets which may bounce off clods reducing the effectiveness of the application.

Adding BackRow Max to residual herbicides manipulates droplet size by reducing the number of very fine droplets - smaller than 100 microns which are the most susceptible to drift - and the number of very coarse droplets - prone to bounce – creating a more optimal size droplet for on-target pre-em application.

Spray application research conducted in 2020 showed adding BackRow Max to the pre-emergence herbicide Liberator, reduced the number of drift prone spray droplets by 35%. It also improved the spray pattern for better coverage compared to herbicide alone.

Significant reduction in the number of drift prone spray droplets

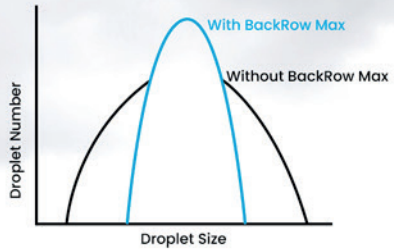
Effect of BackRow Max on % spray volume <100 microns



Source: Silsoe Spray Application Unit, UK 2020.
Lurmark 03F110 Flat fan, 200 L\ha of water.
SD = Significant difference to Liberator alone

Creates the perfect size droplet

Effect of BackRow Max on droplet size and number



Enhanced spray distribution

Inclusion of BackRow Max at 200mls/ha produced better coverage than herbicide alone

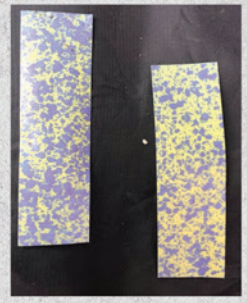
Soil coverage is particularly important with pre-ems, especially at low water volumes.

Spray application trials on farm using deposition papers has demonstrated that the inclusion of BackRow Max with pre-emergence herbicides produces better coverage than applying herbicides alone.

The trials showed optimal coverage utilising BackRow Max with both flat fan and low drift nozzles and a range of water volumes.

Improved spray coverage with Crystal + Liberator

+ BackRow Max | No adjuvant



Syngenta 05 Potato Nozzle
175 L/ha, 2.1 bar

+ BackRow Max | No adjuvant

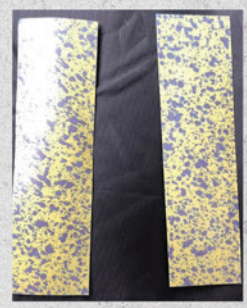
Syngenta 05 Potato Nozzle
200 L/ha, 2.8 bar

Effective with flat fan & low drift nozzles

+ BackRow Max | No adjuvant

Syngenta 03 Defy Nozzle
125 L/ha, 3.3 bar

+ BackRow Max | No adjuvant



Syngenta 03 Defy Nozzle
100 L/ha, 2.2 bar

Effective with range of water volumes

Stronger barrier against weed emergence

Optimising spray application is a key piece of the weed control jigsaw on-farm

"BackRow Max helps us get more from the chemistry in difficult conditions.
Inputs on the whole aren't cheap, but adding BackRow Max is a cost-effective way to increase control. Although the official data is always impressive, from a farmer's perspective, you can see a visible benefit and that the chemistry is doing a better job."

Jon Sensecall,
JH Sensecall & Partners, Warwickshire

PROLONGED PROTECTION

LONGER LASTING WEED CONTROL

BackRow Max works to consistently maintain a lethal dose of active herbicide in the weed germination zone, leading to longer lasting protection from weed emergence.

Enhanced residual activity

Significant increases in herbicide retention following simulated rain event in research: +6% Luximo; +7% clomazone; + 8% pendimethalin

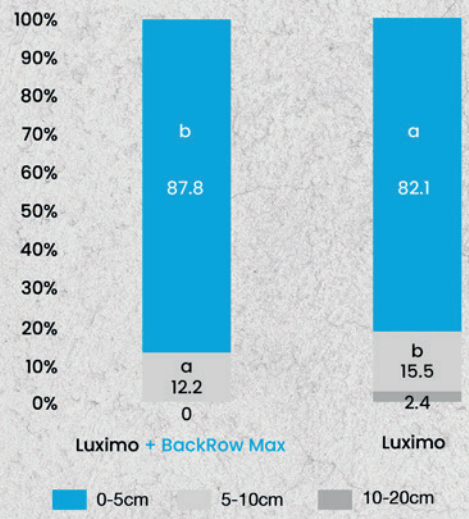
Residual herbicides typically have a limited lifespan in soil and their effectiveness can diminish over time as they pass through the soil profile and out of the weed germination zone (top 5cm of soil). Heavy rainfall after application can speed up this process, particularly in light soils.

Increasing herbicide retention in the top 5cm of soil - better than other adjuvants tested – BackRow Max helps extend the residual activity of herbicides by enhancing their binding to soil particles, prolonging the weed control period and maximising their overall effectiveness. This has been proven in research conducted by the Institute of Soil Science and Plant Cultivation in Poland.

Stronger Luximo retention

In the 2023 research, BackRow Max slowed the movement of Luximo through the soil profile, retaining significantly more of the herbicide in the 0-5cm and 5-10cm of the soil.

A measure of % Luximo residue over 0-20cm depth



Institute of Soil Science and Plant Cultivation National Research Institute in Wroclaw. Prepared by the Prof. Mariusz Kucharski. 2023. Different letters signify statistically significant difference between treatments.

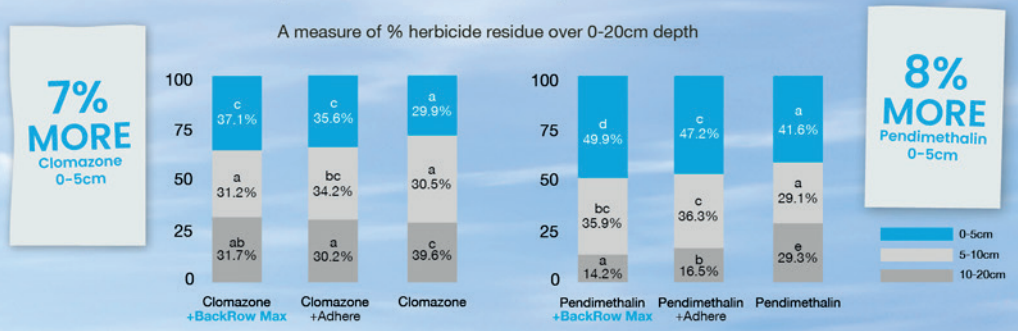
Top-performing retention with clomazone and pendimethalin

Research conducted by the Institute in 2021 and 2022 showed that adjuvants vary greatly in their influence on herbicide retention, with BackRow Max securing the greatest retention in the top 5cm of the soil compared with three competitor adjuvants at their recommended rates, including one of the newer adjuvants, Adhere.

The research was interesting because it confirms observations in the field, that even active ingredients like pendimethalin can move following heavy rainfall after application.

Inclusion of BackRow Max slowed the movement of herbicides significantly, with an additional 7% clomazone and 8% pendimethalin retained in the top 5cm of the soil.

Effect of adjuvant on clomazone and pendimethalin retention



Institute of Soil Science and Plant Cultivation National Research Institute in Wroclaw.
Prepared by Prof. Mariusz Kucharski. 2022. Different letters signify statistically significant difference between treatments.

BACKUP FOR YOUR PRE-EMS ON FARM

Anything that can help the pre-emergence herbicide bind to the soil, increase retention in the layer where the weeds are coming from and give us a percentage-increased control of black-grass is worthwhile having. By maintaining herbicide persistence in the weed germinating zone, we can prevent further waves of weeds in the future and create healthier, more competitive crops.

James Grantham
Agronomist, Agrii

Keeping products in the kill zone for longer means they won't wash down though the soil profiile too quickly and will keep the active where the weeds are geminating for longer. In situations with high black-grass performance, that will be very beneficial.

PROLONGED PROTECTION

Improved herbicide performance in dry conditions
Reduces dependency on rainfall for herbicide activation and uptake

All residual herbicides require soil moisture for activation and uptake into weeds. In dry conditions there may be insufficient moisture to move residual herbicides from the soil surface to the weed zone for activation to occur, and for absorption into germinating weeds.

Likened to rain in a can, BackRow Max slows the drying of the top 5cm of the soil, reducing your dependency on rainfall for herbicide performance. Research and trials have shown that BackRow Max improves the performance of residual herbicides in dry conditions and can benefit weed control by as much as 20%.

AS EFFECTIVE AS AN INCH OF RAINFALL

Agrii trials have shown BackRow Max is as effective as an inch of rainfall within one week of application in improving pre-em performance.

Effect of moisture & BackRow Max on black-grass control in Winter Wheat

8% BETTER BLACK-GRASS CONTROL

Pre-em Treatments (25th October)

79%	86%	89%	89%
Pre-em alone	Pre-em + BackRow	Pre-em stimulated rain	Pre-em stimulated rain + BackRow Max

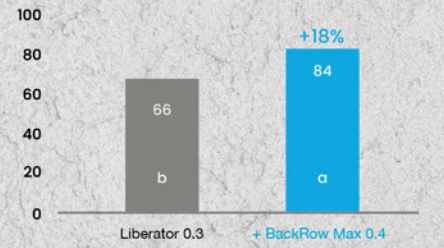
Peri-em Treatments (2nd November)

84%	92%	92%	98%
Peri-em alone	Peri-em + BackRow Max	Peri-em stimulated rain	Peri-em stimulated rain + BackRow Max

2018 Winter wheat trial Stow Longa, UK. Untreated black-grass population 206 ears/m² (no rain); 176 ears/m² (with rain). Simulated rain applied immediately after pre-em. Pre-em herbicides: Movon + Wicket + Avadex Factor (flufenacet + diflufenican + flurtamone) + (Defy) + (triallate). Peri-em herbicides Pontos + Orient (flufenacet + picolinafen) + (pendimethalin + picolinafen)

IMPROVED ANNUAL MEADOWGRASS CONTROL IN SPRING BARLEY

Annual meadowgrass Control (%) in Spring Barley 19 days after application



OAT Stonehaven 2018. Treatments applied pre-em. Liberator contains diflufenican & flufenacet.

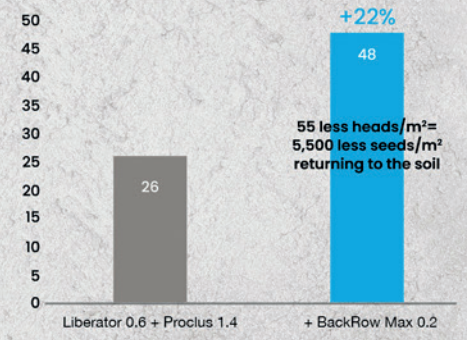
Conditions turned dry after application, impacting herbicide efficacy. Adding BackRow Max improved uptake.

18% BETTER AMG CONTROL

IMPROVED BLACK-GRASS CONTROL IN WINTER WHEAT

Adding BackRow Max improved black-grass control by 22%

Black-grass control (%) in Winter Wheat 20th June assessment - 249 heads/m² in untreated



Agrii 19069. Applied pre-em on 18th October 2018. Soils slightly wet on application. P=0.0681. LSD 31.46. Liberator contains diflufenican & flufenacet. Proclus contains acloniton.

Dry autumn conditions following application reduced herbicide uptake. With BackRow Max, more of the herbicide was taken up, increasing efficacy and reducing seed return the following spring.

22% IMPROVED BLACK-GRASS CONTROL

PROLONGED PROTECTION

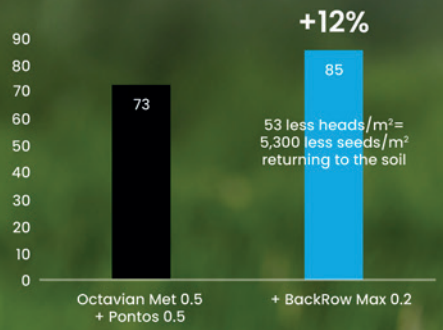
TAKES WEED CONTROL TO THE MAX

By maximising residual herbicide concentration in the weed zone for as long as possible - crucial in wet years – BackRow Max can add valuable efficacy to your pre-ems and take weed control to the max.

12% HIGHER
BLACK-GRASS CONTROL WITH OCTAVIAN MET + PONTOS

Black-grass Control (%) in Winter Wheat

2nd June Assessment - 426 heads/m² in Untreated

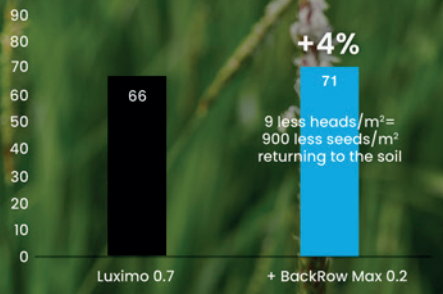


Agril 20832. Agrifocus. Applied 29th October. Soil wet at application, with 2mm of rain in wk following. P=0.0001. LSD 20.17. Octavian Met contains diflufenican, flufenacet & metribuzin. Pontos contains flufenacet + picolinafen.

4% HIGHER
BLACK-GRASS CONTROL WITH LUXIMO

Black-grass Control (%) in Winter Wheat

4th June Assessment - 239 heads/m² in Untreated

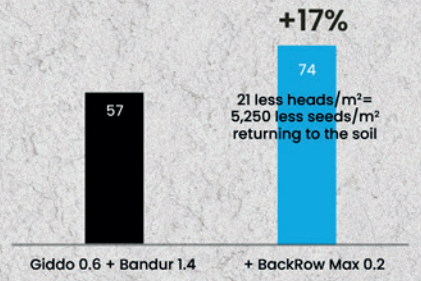


Prime crop Research 2023. Applied pre-em. P=0.5. LSD 12.93. Luximo contains cinmethylin.

WEED CONTROL BENEFITS BEYOND JUST BLACK-GRASS

17% better ryegrass control with Giddo + Bandur

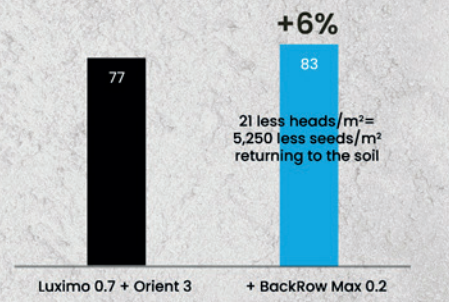
Ryegrass Control (%) in Winter Wheat
20th June Assessment 119 heads/m² in Untreated



Agrii 22827. Applied pre-em on 25th October 2021. Soil slightly wet on application. P=0.442. LSD 29.11. Giddo contains flufenacel & diflufenican. Bandur contains aclionifen.

6% higher ryegrass control with Luximo + Orient

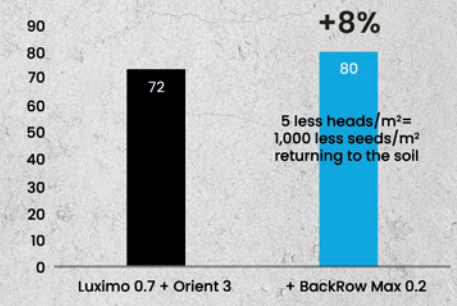
Ryegrass Control (%) in Winter Wheat
20th June Assessment - 119 heads /m² in Untreated



Agrii 22827. Applied pre-em on 25th October 2021. Soil slightly wet on application. P=0.442. LSD 29.11. Luximo contains cinmethylin. Orient contains pendimethalin & picolinafen.

8% better brome control with Luximo + Orient

Brome Control (%) in Winter Wheat
17th June Assessment - 75 heads/m2 in Untreated



Agrii 22827. Applied pre-em on 25th October 2021. Soil slightly wet on application. P=0.442. LSD 29.11. Luximo contains cinmethylin. Orient contains pendimethalin & picolinafen.

ENHANCED ESTABLISHMENT

PROTECTS CROP SAFETY

BackRow Max adds valuable protection to crop establishment by minimising chemical loss from the top 5cm of the soil.

Reduces chemical movement to the crop seed

Chemical movement to the developing crop seed can be problematic in wet years, particularly when stacking residual herbicides for difficult grass-weed control. Herbicides with high solubility in water and low adsorption to organic matter represent the biggest risk. This can be exacerbated in light soils where there is less organic matter to bind to. The impact on the crop may be seen visually in terms of chlorosis, stunting and even less plants establishing per sqm. Worst case, this is likely to affect the competitiveness of your crop and may cost you in yield.

BackRow Max protects crop safety by securing a higher proportion of your herbicides in the soil layer above the developing crop seed. Research in the Netherlands, utilising lysimeters to collect leachate showed BackRow Max reduced chemical leaching by as much as 60%

Less crop damage, more wheat plants per sqm

In this deliberately shallow-drilled (to enhance the risk to crop safety) wheat crop sprayed with Avadex Factor, adding BackRow Max gave a marked reduction in crop chlorosis and increase in wheat plant populations.

29 MORE WHEAT PLANTS/M²

Cultivation	Straw Rake	Herbicide	Drill	Depth	Chlorosis	Wheat plant /m2
No	Yes	Avadex Factor 3.6L	Sky	Shallow	10%	220
No	Yes	Avadex Factor 3.6L + BackRow Max 0.2L	Sky	Shallow	0%	249
No	Yes	Avadex Granules 15kg	Sky	Shallow	0%	230
Yes	No	Avadex Factor 3.6L	Sky	Shallow	20%	293
Yes	No	Avadex Factor 3.6L + BackRow Max 0.2L	Sky	Shallow	0%	304
Yes	No	Avadex Granules 15kg	Sky	Shallow	0%	231

PEACE OF MIND ON FARM

With increasing climate stress on farmers and their crops, incorporating BackRow Max with the pre- and peri-emergence tank-mix can be a valuable weed control and crop safety insurance, as well as giving you the peace of mind you've done your best for crop establishment and the environment.

John Vickery
Agronomist, Agrii

> "One of the main things I have found with BackRow is that it really does push chemical efficacy just that bit further. It also helps products adhere to the soil better, which is incredibly beneficial in times of heavy rainfall as it builds in a little more crop safety when large herbicide stacks are applied. This can be particularly important on some of the thinner brash soils"

SUSTAINABLE PRACTICES

WIDER BENEFITS FOR GROUNDWATER

Optimising residual herbicide applications with BackRow Max could also reduce the risk of chemical loss to groundwater via leaching.

Protecting water

Chemical leaching from top soil through the soil profile not only has implications for herbicide efficacy, it also has much bigger consequences if it reaches watercourses. It risks the environment, has implications on water abstraction to reservoirs, costs taxpayers, and could jeapordise the life of the active ingredient if it keeps being recorded by water companies.

Backup with BackRow Max

Incorporating BackRow Max into your pre- and peri-emergence tank-mix will add valuable protection to groundwater safety by minimising chemical loss from the weed zone.

New research shows optimising residual herbicide applications with BackRow Max could also reduce the risk of nitrogen loss via leaching

Interagro commissioned the Institute of Soil Science and Plant Cultivation in Poland to research the influence of BackRow Max on the movement of nitrogen fertiliser in the soil in the form of ammonium nitrate and urea ammonium nitrate at rates of 120 kg/ha. Where BackRow Max was applied to soil before the fertiliser application, nitrate retention in the upper soil profile was higher and there was significantly less nitrate recorded in 5-10cm and 10-20cm cores compared with the soil that hadn't received BackRow Max (see table below). The movement of ammonium through the soil profile was also significantly reduced with the BackRow Max holding significantly more in the top 5cm for both the ammonium nitrate and UAN fertilisers.

While we're not suddenly suggesting farmers apply BackRow Max with their fertiliser, if they are applying a pre-em and conditions turn wet, adding BackRow Max into the mix could certainly help improve the targeting of fertiliser applications which is good for your crops and the environment.

Average N-NO3 content in soil layers – increased retention with BackRow Max

	N-NO3 [mg/kg d.m.*]					
Treatment	Ammonium Nitrate			Urea Ammonium Nitrate		
	0 – 5 cm*	5 – 10 cm*	10 – 20 cm*	0 – 5 cm*	5 – 10 cm*	10 – 20 cm*
Fertiliser	82.1^{a}	33.2^{c}	10.5^{c}	63.8^{a}	32.6^{d}	12.3^{c}
Fertiliser + BackRow Max	84.9^{ab}	30.1^{b}	7.2^{a}	68.4^{bc}	28.1^{b}	9.6^{ab}
LSD 0.05	3.46	2.19	1.84	3.02	2.08	1.62

a, b, c, d – values marked with the same letter do not differ statistically

WATER STEWARDSHIP

"Any innovative measures – and that includes adjuvants — that are going to hold products in the field for longer are going to benefit both us and the farmer."

Chris Hewis
Catchment Advisor, Anglian Water

For Chris Hewis, catchment advisor for Anglian Water, the ability of adjuvants, including BackRow Max, to reduce the movement of herbicide and nitrate to water is hugely valuable.

"This year (2023/24) hasn't been a bad year for herbicides in watercourses, largely as a lot of crops didn't get drilled and a lot didn't get an application of autumn herbicides – and it's this application that is usually our biggest issue," explains Chris.

"It's quite surprising how quickly we find chemicals in the water after spraying. The challenge with this is costly treatment is needed to reduce rates down to the legal minimum, so instead water companies - including Anglian Water – are actively trying to work with farmers to look at and facilitate putting tools in place to avoid chemistry entering the watercourses in the first place," he says.

"Over the past year we've seen increasing levels of nitrates in water levels which has meant we've had to stop abstractions or not been able to fill reservoirs when we've wanted to, so it's really important to avoid this as much as we can. Some of the measures for best practice include creating buffer strips or sowing cover crops so that nutrients are held in the field longer," says Chris.

"Adjuvants are also another example of a tool that can help keep products in the field, but also provide a mutual benefit for farmers. If products stay in the field longer, not only can we reduce spikes in the watercourses, but farmers are also getting more benefit from the product they've spent out on.

"Any innovative measures – and that includes adjuvants — that are going to hold products in the field for longer are going to benefit both us and the farmer."

Jon Sensecall,
JH Sensecall & Partners, Warwickshire

Jon Sensecall has been battling black-grass since 2012 and utilising all the tools in the toolbox, including adjuvant BackRow Max® to help him achieve the best black-grass control possible. Farming 600 acres of wheat, barley, beans and oilseed rape in rotation, and contract farming another 450 acres in Southam, Warwickshire, Jon Sensecall is using every cultural control tool in the toolbox, but black-grass continues to have an impact despite a robust herbicide programme. It's for this reason Jon has also been focusing on application to maximise pre-em efficacy, with adjuvant BackRow Max® going in the tank to push performance and get the most from all the modes of action.

SCAN THE QR CODE
TO READ ABOUT JON'S STORY

Keith Challen,
Farm Director, Leicestershire

Keith Challen has made significant improvements to black-grass control on the heavily burdened soils of the Belvoir Estate over recent years, and sees BackRow Max® as a key part of the strategy.

Keith is farm director at Belvoir Farming Company, Leicestershire where he oversees the management of 1,200ha of very heavy clay soils which have historically been plagued by black-grass. However, through meticulous attention to detail and using the full breadth and width of both chemical and cultural controls, the farm has made significant progress over recent years and is now achieving 98% control.

SCAN THE QR CODE
TO READ ABOUT KEITH'S STORY

APPROVED LABEL CROPS IN THE UK

The benefits of BackRow Max can be utilised with all approved residual herbicides in the following crops up to the latest timing of the herbicide:

Vegetable crops

Broccoli / Calabrese
Brussel Sprouts
Bulb Onion, Shallot, Cabbage
Oriental Cabbages Cauliflower
Carrot, Parsnip, Swede, Turnip
Garlic
Red Beet*
Leek
Spinach
Spring Greens - Collard and Kale

*Does not include beetroot grown for salad leaf use

Fruit & salad crops

Apple and Pear
Apricot, Cherry, Peach, Nectarine and Plum
Blackberry, Raspberry and Strawberry
Blackcurrant and Redcurrant
Cucumber
Lettuce
Rocket
Salad Onion
Sweetcorn
Table Grapes and Wine Grapes
Tomato

Arable crops

Winter and Spring Cereal
Beans - Fresh, Broad, Runner
Combining and Vining Peas
Field Bean
Hops
Linseed
Forage Maize
Oilseed Rape
Potatoes
Soybean
Sugar Beet
Fodder Beet

HOW TO INCORPORATE BACKROW MAX®
INTO YOUR RESIDUAL HERBICIDE PROGRAMME?

BackRow Max is approved for use with all residual herbicides in the crops shown (left) and can be utilised at both the pre- and peri-emergence spray timings.

HOW TO ORDER BACKROW MAX®

Speak to your Agrii agronomist

BackRow Max is available to purchase through Agrii. You can either order through your Agrii agronomist or contact one of the local depots.

PRODUCT PROFILE

Classification	Residual herbicide adjuvant
Composition	82.6% petroleum oil
Recommended use	With all residual herbicides applied pre- and peri-emergence
Soil type	For use in all soil types except pure sand
Rates of use	0.2 L/ha in the Autumn, 0.4 L/ha in Spring
Mixing order	Add to the spray tank first before adding crop protection products
Pack size	5 litres

BackRow MAX® AT A GLANCE

BACKUP FOR YOUR PRE-EMS

BackRow Max is the reliable adjuvant partner to residual herbicides, ensuring that your pre-ems deliver consistent, long-lasting weed control, no matter the conditions. For farmers seeking peace of mind and a thriving crop.

BackRow Max strengthens pre-em performance and takes weed control to the max

Improves spray deposition and coverage
Up to 35% reduction in drift prone spray droplets; optimises droplet size with flat fan and low drift nozzles.

Increases herbicide retention in (top 5cm of the soil) the weed germination zone
Improvements in all studies 0-5cm: 7% more clomazone; 8% more pendimethalin; 6% more Luximo; 7% more nitrate.

Increases moisture retention in dry seedbeds
33% increase in water retention recorded in Lysimeter studies in the Netherlands.

Enhanced residual activity
In cereals up to: +17% black-grass control; +17% ryegrass control; +18% brome control.

Boosts effectiveness in dry seedbeds
In cereals up to: +22% black-grass control; +18% annual meadow-grass control.

Reduces crop phytotoxicity and improves crop establishment
Phyto trials: 20% reduction in chlorosis and increased wheat emergence by up to 29 plants per sqm.

Security for your fields

- Top-performing herbicide retention & therefore residual activity
- Only adjuvant shown to improve herbicide effectiveness in dry conditions
- Significantly reduces nitrogen leaching
- Increases retention of subsequent chemical application

Better for the environment

- Cleaner label
- No hazard statements
- Reduces the risk of herbicides and nitrates leaching to groundwater

GET IN TOUCH

For more information visit www.nichino.uk

GENERAL ENQUIRIES:

Nichino UK
info@nichino.uk

TRY IT TODAY

AND SECURE YOUR FIELDS. ASK AGRII FOR BackRow MAX.

NICHINO

V3-08/25