



# Scottish Agronomy **Potato Bulletin**

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## 1. An incredible but alarming spell of February weather

An early start to potato planting in Fife was observed near Anstruther before the end of February.

A new temperature record for February was set in Aboyne on 21st February at 18.3°C. This broke the previous record reached in Aberdeen on 22 February 1897. Shortly afterwards Avernish near Kyle of Lochalsh on the West coast of Scotland recorded an overnight temperature of 18.6°C. The lowest overnight value was 17°C in Avernish which is higher than any summer nights through 2018.

Daytime temperatures in Fife in the last week of February were higher than the average daytime maximum temperature for July. This lifted some soil temperatures above 6°C and tempted planters out for second early varieties to be fleeced.

## 2. CIPC non-renewal looking increasingly likely

At the Standing Committee on Plants, Animals, Food and Feed (SCoPAFF) meeting on 21/22 February 2019 no qualified majority was reached in favour of the EU Commission's proposal for non-renewal of chlorpropham.

The Commission can now decide to move the existing proposal forward to an Appeal Committee or put the existing or an alternative proposal to the next SCoPAFF meeting. If there is agreement at Appeal for non-renewal, or an impasse where no opinion is delivered, the Commission can proceed with non-renewal. It is looking increasingly likely that this will be the outcome.

Given this situation there is no update on potential timelines for product authorisations. As informed previously, the 2019/19 storage season is expected to run with currently authorised uses. For the 2019/20 storage season we must await developments.

### 3.

## Warm, dry winter raises prospect of midsummer abstraction controls

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Most of England was drier than normal for the second half of 2018 and into January.

Drier conditions with higher than average temperatures predominated in February and are forecast to continue until the end of the month. In the latest three month Met Office forecast for March to May there is no clear signal of rainfall being above or below average, but above average temperatures are expected to dominate.

This situation raises the prospect for many of the potato growing areas in England of low water levels this summer. Some controls on surface water abstraction are possible by midsummer if the weather is hot and dry. Controls on abstraction from groundwater are possible in small, sensitive groundwater areas.

This combined with seed availability may have an adverse impact on the GB area planted.

### 4.

## Decision time for seed & in-furrow treatments

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Now's the time to decide what you're going to apply from the planter.

### a) Integrated Control of Rhizoctonia and black dot

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The primary disease targets at or shortly before planting are Rhizoctonia (black scurf), black dot and, for seed crops, powdery scab. Treatments targeting storage rots (dry rot, gangrene and skin spot) should be applied at store loading or early in storage, the goal being to prevent the spread of infection during grading. Treatment at this stage is only justified where symptoms are present in seed. Contact advisory staff if these diseases are observed in seed stores.



### ACTIONS

- ➔ Have you specified seed to arrive treated on the roller table for soil-borne Rhizoctonia? If not, select a powder product for on-planter application from the table below.
- ➔ Are you concerned about soil-borne Rhizoctonia? If so, select an in-furrow product from the table below.
- ➔ Is your soil contaminated by black dot? If so, select an in-furrow product from the table below.
- ➔ Have you found any storage rots on your seed? If so, contact us for advice.

There is no treatment threshold for seed-borne Rhizoctonia so a seed treatment is always recommended. Product choice depends on perceived risk from soil-borne Rhizoctonia. Light soils with high organic matter are higher risk, as are slow emerging varieties such as Saxon. PCN or FLN feeding damage also increases the severity of stem and stolon canker.

Application Method	Product	Dose/t	Disease Control	Comments
Roller table	Maxim 100FS	250 ml	Useful control of seed-borne Rhizoctonia	Useful alternative to powders for belt planters. Evidence of common scab suppression in some situations. Use on seed crops covered by EAMU but NOT for UK or EU seed.
	RhiNo	200 ml	Control of seed-borne Rhizoctonia	Some systemic activity that reduces symptoms from soil-borne Rhizoctonia.
On planter	Emesto Prime DS	1.0 kg	Control of seed-borne Rhizoctonia	
	Monceren	1.0 kg	Control of seed-borne Rhizoctonia	The only powder product that can still be applied manually.
	RhiNo DS	2.0 kg	Control of seed-borne Rhizoctonia	Some systemic activity that reduces symptoms from soil-borne Rhizoctonia.
In furrow	Allstar	0.8 L	Moderate control of soil-borne Rhizoctonia	Incidental reductions in black dot observed in some trials but product not currently approved for this purpose.
	Amistar	3.0 L	Reduction of soil-borne Rhizoctonia and Black dot	Misapplication (drift hitting seed tubers) and sequences with multiple seed treatments can delay emergence particularly if soil is wet/cold. Effect on black dot is rate sensitive so avoid cutting dose.

Most rotations are contaminated with black dot so in-furrow azoxystrobin (Amistar etc) should always be considered as part of an integrated control strategy (table XX). For pre-pack crops destined for longer-term storage it is a must. Lighter soils are higher risk and some varieties are more susceptible e.g. Maris Piper, Estima, Maris Peer (set skin), Osprey, red skin varieties. Failure at any of the control points will negate the effect of the pesticide.

**Table XX: Integrated control of Black Dot**

Risk Factor	Response
<b>Disease on input seed</b>	Minor effect on progeny disease levels. ????
<b>Store management</b>	Achieve rapid cooling from store loading (up to 0.5 degree/day) Reduce humidity. Close the doors!
<b>Senescence/ desiccation period</b>	Minimise the period from start of senescence/desiccation to harvest through nutrition, desiccation technique and harvest management

## b) Integrated control of powdery scab for seed crops

Powdery scab control should also be considered as part of an integrated strategy (Table XXX) for seed crops. Fluazinam (e.g. Ticza / Nando 500SC at 3.0 L/ha) is the only treatment available. It must be applied by in-furrow band spray or specialist equipment. No further application of fluazinam is permitted so it cannot be used for Sclerotinia control.

Table XXX: Integrated control of Powdery Scab

Risk Factor	Response
Soil type	Moisture retentive soils are higher risk but light soils are not immune
Drainage	Avoid imperfectly drained fields even with light soil texture
Fluctuating water table	Rising and falling water table increases risk so ???
pH > 6	???
Soil Zinc level	Soils >6 mg/kg are less risk. Most Scottish soils have <2.5 mg/L
Rotation & previous history	If a crop with powdery scab was grown within 15 years the risk is increased.
Slurry/manure	Do not spread slurry or manure from livestock that have been fed potatoes as it may be contaminated.
Seed infection	Trace levels of infection (spores) on seed less relevant as soil infection over-rides seed infection.
Variety	Select resistant varieties for high risk fields if possible.
Market outlet	Seed for export e.g. Atlantic for Thailand/Indonesia and Desiree for Morocco = Nil tolerance. Home trade 3% with 10% surface area.

## 5.

### All change for weed control

The big change for weed control this season is we have to do it without linuron. Below we recommend alternative residual mixes and contact options.

Revocation of diquat is also on the horizon (last date for sales & distribution 31st July 2019, last use 4th February 2020). If diquat supplies are limited, prioritise desiccation over herbicide use but note that Retro is only registered as a herbicide.

Certain weed species are best treated pre-emergence or at small weed stages. This especially applies to the difficult weeds, fumitory, polygonums (such as knotgrass and bindweed) and cleavers. Without diquat the control of established annual meadow grass will also be more difficult.

The residual herbicide options listed below are for pre-emergence use and a number will cause significant crop damage if applied later. This can lead to difficulties where crops are emerging rapidly, or the weather limits spraying opportunities. Contact herbicides can be applied separately, if a flush of weeds has emerged and, as close as possible to crop emergence.



### Herbicide applied 'just too late' ...and the consequences

To ensure crop safety and the best possible activity, residuals should be applied from seven days after planting, ideally with soil moisture present.

The exception is Defy. Due to its shorter half-life Defy mixes should be applied just before crop emergence. The latest time of application on the label is 'at emergence' (soil rising over emerging potato shoots). In this scenario a contact product should be included in the mix if weeds are present.

Check with advisory staff or use the following link for variety tolerance and soil type restrictions before using mixes containing metribuzin (Artist, Shotput, Sencorex Flow etc).

[http://www.adama.com/documents/268722/282039/shotput-variety-list\\_tcm105-56778.pdf](http://www.adama.com/documents/268722/282039/shotput-variety-list_tcm105-56778.pdf)

Key restrictions on pre-emergence applications of metribuzin include;

Soil Type	Variety
Any	DO NOT treat: Cabaret, Lady Claire, Balfour
Sands, v. light or light soils	DO NOT treat: Innovator, Sagitta, Shepody, Exquisa
Sands or v. light soils	DO NOT treat: Maris Piper, Sante, VR808

#### ACTIONS

- ➔ Plan residual and contact weed control from the options summarised.
- ➔ Take note of the herbicide timetable below.
- ➔ If diquat supplies are limited, prioritise desiccation over herbicide use but note that Retro is only registered as a herbicide.

#### a) Pre-emergence residual herbicides - metribuzin *tolerant* varieties

##### Artist 2.0 - 2.5 kg/ha

- Offers strong activity on annual meadow grass and includes cleaver activity
- Do not use Artist on sands or very light soils

##### Shotput/Cleancrop Frizbee (70% w/w metribuzin) 0.5 - 0.75 kg/ha + Praxim/Inigo/Soleto 2.0 - 3.0 L/ha

- The upper rate of metribuzin will improve activity but be cautious on lighter soils: talk to advisory staff if uncertain
- Praxim adds activity on annual meadow grass and, at the higher rate, partially fills the black bindweed gap left by the loss of linuron
- Addition of Gamit at 0.15 L/ha expands weed spectrum to include cleavers. Gamit should be applied within two weeks of planting and preferably seven days before crop emergence. Some yellowing of the crop can occur following applications of clomazone, but this is mostly after a full dose is applied to dry ridges followed by irrigation or heavy rain
- Sencorex Flow liquid can be substituted rate for rate for water dispersible granules i.e. 0.75 kg/ha of Shotput is equivalent to 0.75 L/ha of Sencorex Flow.

##### Shotput/Cleancrop Frizbee (70% w/w metribuzin) 0.5 - 0.75 kg\* + Defy 3.0 - 4.0 L/ha

- Particularly suitable where fumitory is a problem
- Inclusion of Defy supplies cleaver control but it is very insoluble making the product less active under dry soil conditions
- Sencorex Flow liquid can be substituted rate for rate for water dispersible granules i.e. 0.75 kg/ha of Shotput is equivalent to 0.75 L/ha of Sencorex Flow

## b) Pre-emergence residual herbicides – metribuzin *intolerant* varieties

### Defy 3.0 - 4.0 L/ha + 400 g/L pendimethalin 2.5 L/ha

- Suitable on varieties which are not metribuzin tolerant, however efficacy can be reduced in dry soil conditions
- Mixtures containing pendimethalin should not be applied later than seven days before crop emergence

### Defy 3.0 - 4.0 L/ha + Praxim/Inigo/Soleto 2.0 - 3.0 L/ha

- Suitable on varieties which are not metribuzin tolerant, however efficacy can be reduced in dry soil conditions.
- Mixtures containing pendimethalin should not be applied later than seven days before crop emergence.

## c) Contact Herbicides

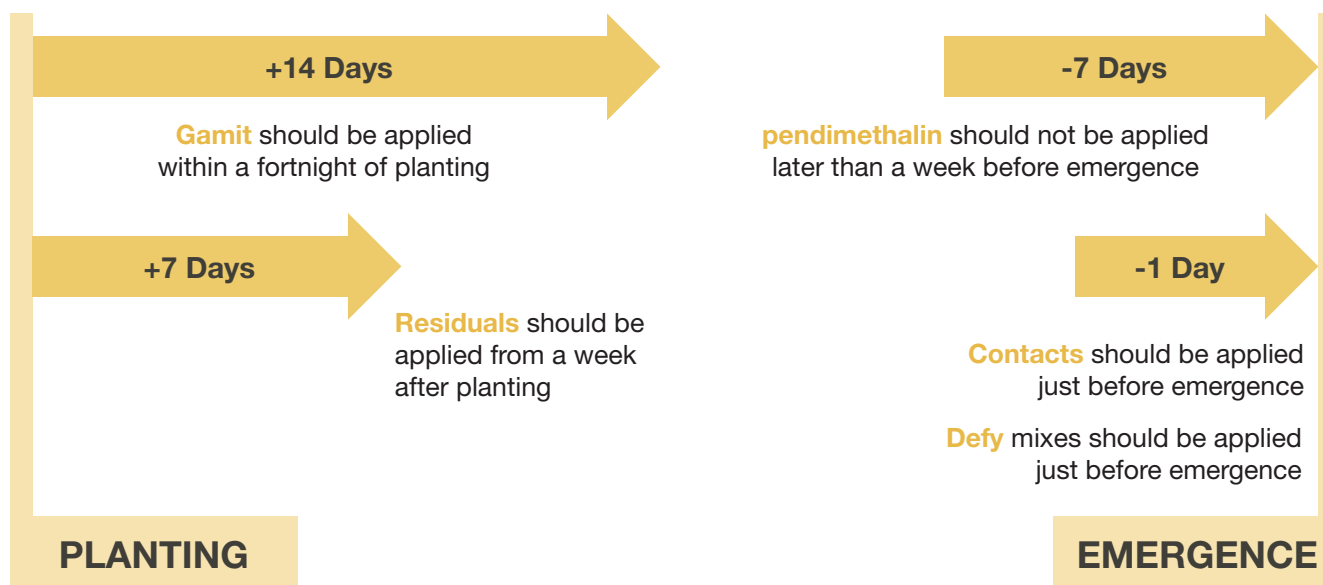
The following options can all be tank mixed with the pre-emergence residual options above or applied as a separate follow up treatment if weeds emerge.

Option	Dose L/ha	Latest Timing (maincrop)	Comments
Retro + non-ionic wetter	2.0 – 3.0	40% emergence	For general broad leaf weed control applied when grass weeds are at 1-2 leaves.
Gozai + Toil methylated veg oil	0.4 + 1.0	10% emergence	
Shark	0.33	10% emergence	Most suitable where tillering annual meadow grass is present at application.
Shark + diquat	0.33 + 1.5	10% emergence	

### Retro – important to note

- Retro is the only diquat product approved for use above 2.0 L/ha for weed control
- Retro provides more reliable control of mayweeds and fumitory, the higher rate is appropriate for larger weeds particularly volunteer OSR
- Retro should be mixed with an approved non-ionic wetter such Activator 90 at 0.1% of the water volume unless applied with Shark or Defy

### Diagram xxx: Important herbicide timescales for 2019





# Scottish Agronomy **Potato Bulletin**

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**PESTICIDES:** Always read the product labels, use pesticides safely.

**PRODUCTS:** Mention of products in the Scottish Agronomy Potato Bulletin does not constitute an endorsement, nor does failure to mention products imply criticism.

**RECOMMENDATIONS:** Information in the Scottish Agronomy Potato Bulletin is intended to provide guidance, but cannot constitute a recommendation. You are strongly advised to contact a qualified agronomist if more detailed information is needed.

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