



# growers' advice

## Fight against Blight

### ISSUE 6: SPRAY APPLICATION TECHNIQUE

APPLICATION OF POTATO BLIGHT FUNGICIDES



#### Key messages on spraying technique

- Spraying for potato blight can be a compromise between treating all the crop on time and achieving optimum crop cover.
- Timing is more important than fungicide product choice or perfect coverage. However, good coverage is essential - particularly to prevent tuber blight.
- Avoid extending intervals between applications during high blight risk. One day early is better than one day late.
- During the phase of rapid growth, good coverage of the growing point is essential.
- Treat all parts of a potato crop. Missed areas will become infected and create a high disease pressure. Avoid planting parts of fields where spraying is difficult (e.g. around telegraph poles).

#### Nozzle selection can influence efficiency of application and water volume used

- In early crop development lower water volumes can provide adequate cover.
- As full canopy is reached higher water volumes tend to give better cover, 150-300 litres/ha is considered optimal with conventional nozzles.
- The effectiveness of different water volumes has not been well tested with different fungicides.
- Blight fungicides are best applied in a medium spray quality.
- High water volumes can increase chemical run-off.
- Application at more than 300 l/ha should use a course spray quality.
- Nozzles selected for reducing drift (3 star nozzles) to fulfil LERAPS requirements may give sub-optimal coverage because droplets may not penetrate the canopy effectively.
- Angled jets give better canopy cover at all stages but particularly up to and including full canopy, from which point the crop starts opening up allowing easier canopy penetration. There is evidence to suggest that 200 l/ha outperforms 400 l/ha. They can also result in increased drift.
- The Dropleg system can deliver more even coverage through the canopy.
- The Spraymax system has not been extensively tested but preliminary results have been encouraging.

Nozzle type	Appropriate water volumes (l/ha)
'Over the top' flat-fan nozzles	150 - 300 (- 400)
Angled	150 - 300 (- 400)
Dropleg (delivering spray from above and below canopy)	150 - 300
Air-assisted	80 - 150
Twin fluid	80 - 120
Spraymax	50-70

### Spraying for blight requires:

- PA2 certification is a legal requirement <sup>1,2,4</sup> for sprayer operators
- A COSHH assessment <sup>6,7</sup>
- Appropriate Personal Protective Equipment <sup>8</sup>
- The label to be read and LERAPS requirements understood <sup>5</sup>
- Awareness of requirements under Production Protocols (Nature's Choice has some restrictions on product use)
- The sprayer to be tested annually through the National Sprayer Testing Scheme <sup>1,2,3</sup>

### References

1. Voluntary Initiative - <http://www.voluntaryinitiative.org.uk>
2. National Association of Agricultural Contractors – <http://www.naac.co.uk>
3. National Sprayer Testing Scheme - <http://www.aea.uk.com/sprayer/index.htm>
4. NPTC - <http://www.nptc.org.uk/>
5. Pesticide Safety Directorate - [http://www.pesticides.gov.uk/farmers\\_growers\\_home.asp](http://www.pesticides.gov.uk/farmers_growers_home.asp)
6. Health & Safety Executive – COSHH - <http://www.coshh-essentials.org.uk/>
7. Health & Safety Executive – COSHH, a brief guide to the regulations - <http://www.hse.gov.uk/pubns/indg136.pdf>
8. Crop Protection Association Best Practice Guides – Protective Equipment - [http://www.cropprotection.org.uk/content/best\\_practice/pub\\_equipment.asp](http://www.cropprotection.org.uk/content/best_practice/pub_equipment.asp)

This note was prepared by the BPC Crop Protection Treater Group  
The information supplied is believed to be correct but neither the British Potato Council nor members of the Crop Protection Treater Group can accept responsibility for any errors or omissions.

**USE PESTICIDES SAFELY, ALWAYS READ THE LABEL**

**For more information on spray quality please consult your local BASIS registered advisor**

**Always consult your buyer protocols before using any pesticides**

## BLIGHT PRODUCTS

**Products withdrawn after 2003: Patafol, Recoil, Ripost, Trustran and products containing tin (fentin acetate and fentin hydroxide)**

<b>Product<sup>a</sup></b>	<b>Active Ingredients</b>	<b>Manufacturer/ Supplier<sup>a</sup></b>	<b>Manufacturer/ Supplier water volume range (l/ha)</b>	<b>Manufacturer/ Supplier stated spray quality</b>
Galben M	benalaxyl + mancozeb	Sipcam	220 min.	Medium
Bravo 500	chlorothalonil	Syngenta	220 min.	-
Adagio	chlorothalonil + mancozeb	Interfarm	200 min. to 1000	Fine
Merlin	chlorothalonil + propamocarb hydrochloride	Bayer CropScience	200-300	Medium
Ranman TP	cyazofamid	Certis	200-400	Medium
C 50	cymoxanil	Sipcam	200 min.	Medium
Tanos	cymoxanil + famoxadone	DuPont	200 min.	Medium
Curzate M 68	cymoxanil + mancozeb	DuPont	200 min.	Medium
Globe	cymoxanil + mancozeb	Sipcam	200 min.	Medium
Invader WDG	dimethomorph + mancozeb	BASF	200 min.	Medium
Sonata	fenamidon + mancozeb	Bayer CropScience	200-400	Medium
Consento	fenamidon + propamocarb hydrochloride	Bayer CropScience	200-400	Medium
Shirlan	fluazinam	Syngenta	200-500	Medium
Dithane DFNT	mancozeb	Interfarm	200 min to 1000	Fine
Fubol Gold	mancozeb + metalaxyl-M	Syngenta	200 min.	Fine (Medium if mixed with other products)
Tattoo	mancozeb + propamocarb hydrochloride	Bayer CropScience	200-300	Medium
Electis 75WG	mancozeb + zoxamide	Interfarm	200-600	Fine
Epok	metalaxyl - M + fluazinam	Belchim	200 min.	Fine (Medium if mixed with other products)
Cuprokyt FL	copper oxychloride	Unicrop	1100-1300	-
Wetcol 3	Bordeaux Mixture (copper sulphate and lime)	Ford Smith	1000	-

<sup>a</sup> Only one product name and manufacturer/supplier is listed for each active ingredient or mixture.