Peony herbicide evaluation and downy mildew control on column stocks

Selchuk Kurtev, Zest – Sustainable ICM

HORTICULTURE

Peony herbicides

- Main objective of the trial was to assess PHYTOTOXICITY resulting from early spring applications of residuals before shoot elongation stage
- Seeking a product with widest possible approval
- Good, wide range of weed species controlled
- Long lasting activity
- Possibly approved already (!)
- Some experience from previous look-see work on peonies in 2021

What was included

№	Treatment	Active ingredient content (formulation)	Dose rate / ha	Application water volume, L	Concentration	EAMU	Expiry Date
1	Lector + Samson Extra 6%	Florasulam + nicosulfuron	0.15L + 0.75L	200	0.75ml/Litre + 3.75ml/Litre	0880/22 1440/21	30/06/2033 30/06/2025
2	Titus (MAPP15050) + Defy	Rimsulfuron + prosulfocarb	0.05KG + 5.00L	200	0.25g/Litre + 25ml/Litre	1911 + 1912/14 1431/13	31/10/2022 30/04/2025
3	Eagle + Flexidor	Amidosulfuron + isoxaben	0.04KG + 0.50L	200	0.2g/Litre + 2.5ml/Litre	3093/19 On label	30/06/2025 28/02/2027
4	Quantum SX + Devrinol	Tribenuron-methyl + napropamide	0.03KG + 7.00L	200	0.15g/Litre + 35ml/Litre	0895/19 0168/20	09/092099 12/01/2024
5	**Coded 1** + Venzar	**Coded 1** + lenacil	**Coded 1** + 0.40L	200	**Coded 1** + 2.0ml/Litre	No approval 4263/19	No approval 30/06/2025

Sustainable ICM

- All products showed no phytotoxicity symptoms
- No effect on number of stems or stem length
- Weed control was not assessed, but observations showed **TRT 1** gave **good suppression**
- Coded product needs further testing, but EAMU would be very useful

Peony contact herbicides for post-harvest weed control

- Main objective was to test for phytotoxicity
- Contact herbicides assessed
- Control of emerged weeds post-harvest of crop
- Products with approval on ornamentals, or approval process underway

1	Untreated control
2	Shark + SW7
3	**Coded 1 + adjuvant**
4	Katoun Gold
5	Corzal SC
6	Dow Shield
7	Galera
8	Starane Hi-Load
9	Starane XL
10	Basagran
11	**Coded 2**

Sustainable ICM

Downy mildew on column stocks

- 2018 saw >40% losses in main crops
- Heavy reliance on Fubol Gold
- Usual programme based on 2-3 spray treatments (8-10 currently)
- Found both in UK and Ireland
- Samples collected and testing commenced at Fera


National Cut Flower Centre/
AHDB Horticulture Information Sheet 11

The National Cut Flower Centre

The National Flower Association

AHDB

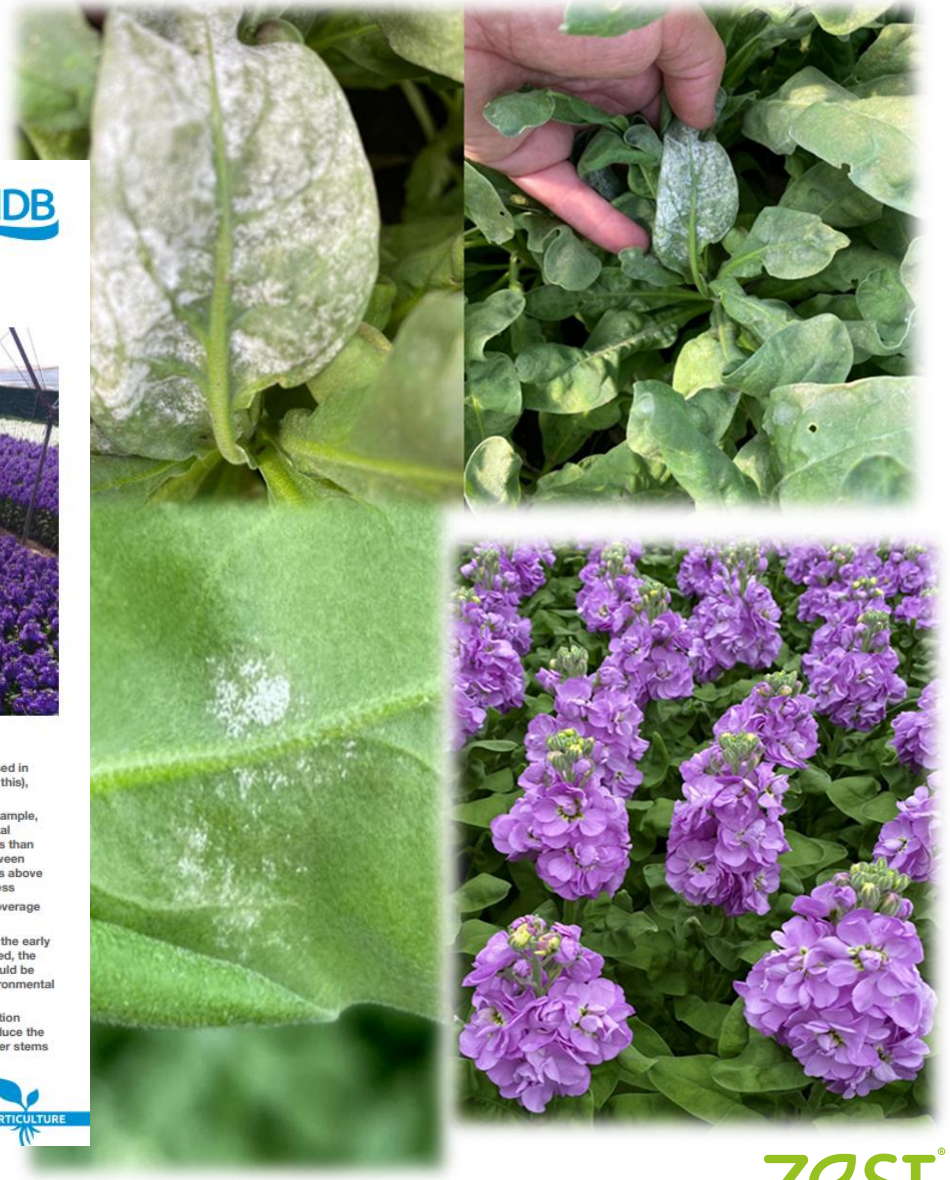
Maintaining successful control of downy mildew in protected crops of cut flower column stocks

Figure 1. Healthy cut flower column stock crops

Grower summary

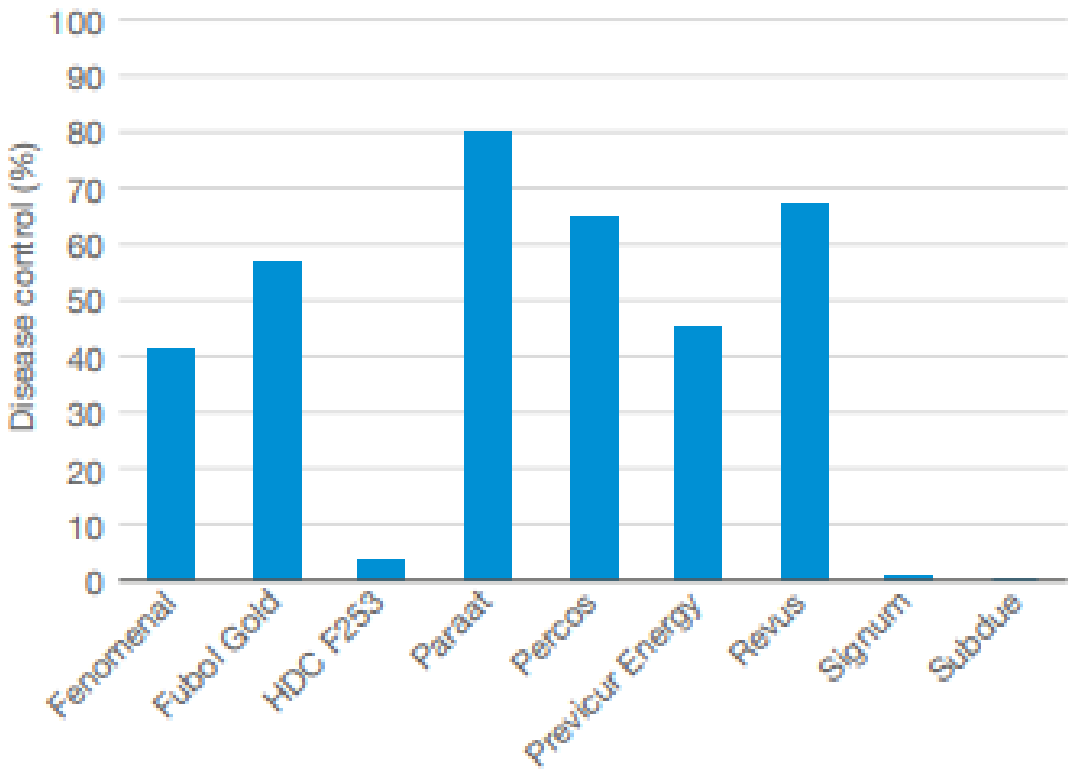
- Downy mildew diseases are best managed via a combination of cultural and chemical control measures within an integrated crop management programme
- Cultural control measures include adequate structure ventilation, use of trickle irrigation and application of appropriate levels of crop nutrients
- Growers should obtain fungicide application records from their plug plant suppliers and take these into account when creating crop fungicide programmes
- Select fungicide products with an appropriate mode of action to achieve the desired effect, taking into account stage of crop growth, disease development and application method
- Programmes based on protectant fungicides must be implemented three to five days after planting and before the onset of any visible disease symptoms
- Fungicides from at least three different fungicide groups, as specified by the Fungicide Resistance Action Committee (FRAC), should be used in any programme
- Products from different groups can be used in tank mixes (where manufacturers permit this), or alternated within spray programmes
- Spray intervals should be reduced; for example, from 14 to seven days when environmental conditions favour downy mildew; and less than seven days when the temperature is between 15°C and 21°C and the relative humidity is above 70%, or during long periods of leaf wetness
- Spray applications must achieve good coverage of leaves throughout the crop canopy
- Where rapid vegetative growth occurs in the early stages of the crop while overhead irrigated, the intervals between spray applications should be shorter, especially under favourable environmental conditions, to protect new growth
- Minimise the application of solid formulation fungicides at the point of flowering to reduce the risk of potential leaf deposits on cut flower stems at marketing

HORTICULTURE



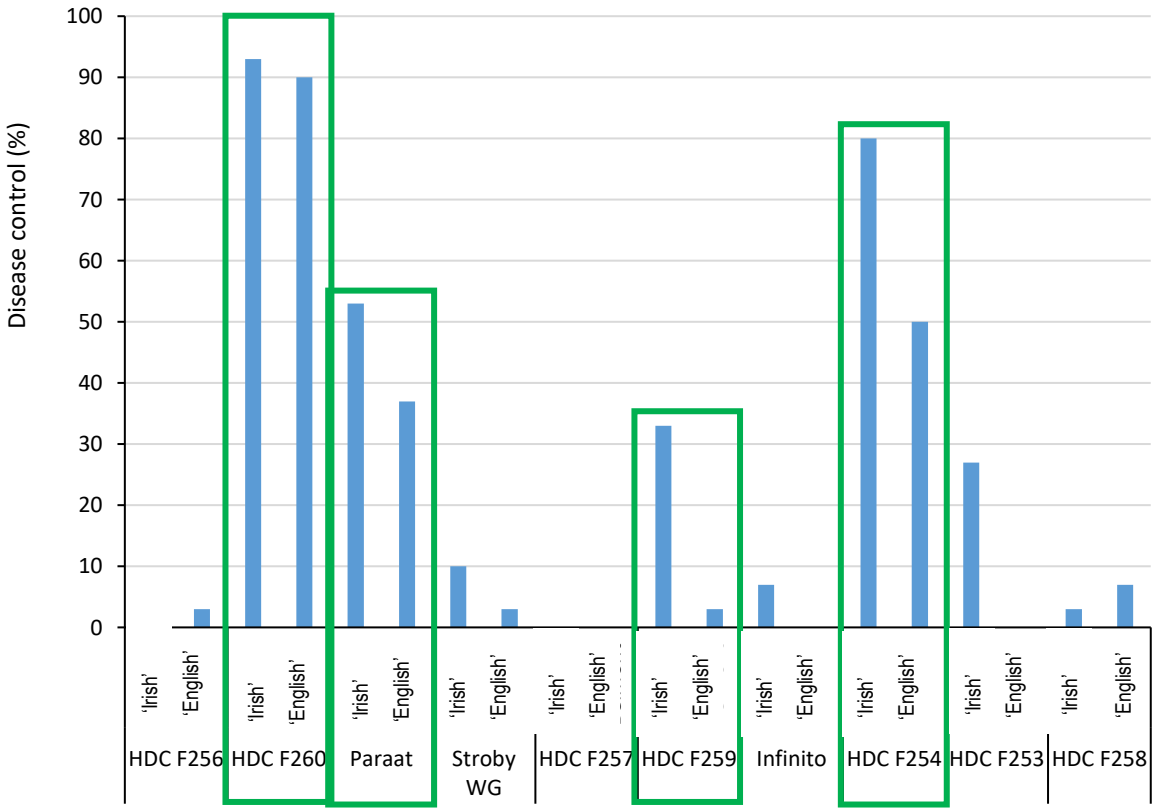
zest
Sustainable ICM

First trial



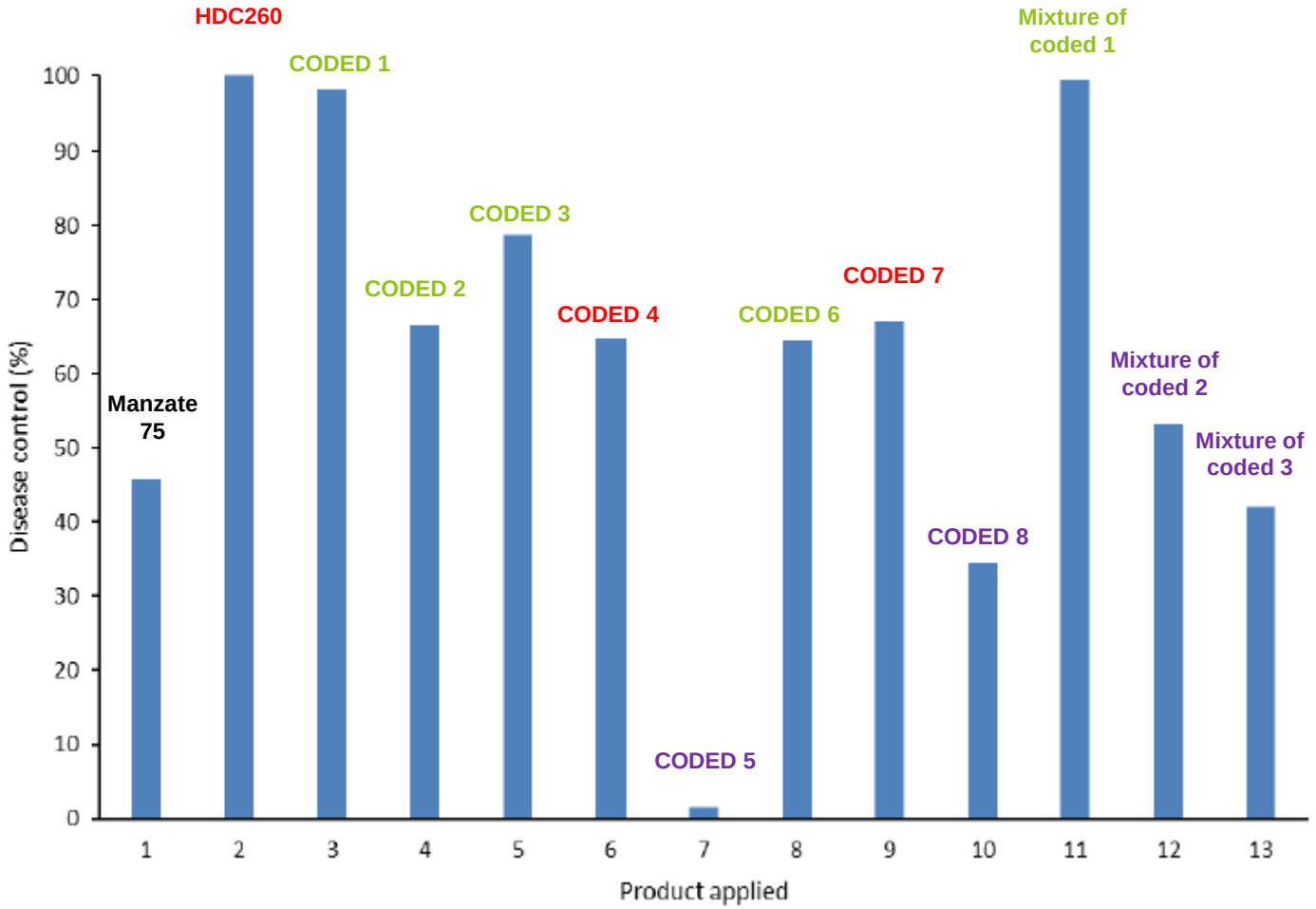
- Paraat, Percos and Revus gave the highest percentage control
- Fenomenal and Previcur Energy – assumption that control due to phosphonate component
- Subdue clearly not providing control
- Similarly, with HDC253 – Ranman Top

Second trial



- Generally, 'Irish' strain more sensitive than 'English' strain
- Clear efficacy from F260 and F254
- Paraat still delivering good activity
- F253 (Ranman Top) clearly underperforming
- Disappointing performance from Infinito, F256, F257 and F258
- F259 could potentially be useful

Third trial



- Future product availability looked grim!
- Included as many products as possible
- HDC260 potential new ‘back bone’ of downy mildew control
- HDC260 then revealed no possibility for ornamentals
- 2020 we were still getting good results from programme we put in 2018

Phytotoxicity trial

- 3 timings
  - Active vegetative growth (Friday 3rd June – 26ºC outdoor temperature 14:30) – 4 x dose rate
  - Flower bud formation rosette stage (Monday 20th June – overcast, 23ºC outdoor temperature 15:40) – 2 x dose rate
  - 20% open flower (8th July – sunny, 28ºC outdoor temperature) – label dose rate
- Water volumes applied
  - Timing 1 – 800L
  - Timing 2+3 – 1,000L
- Medium spray quality (FF Blue)
- **NO PHYTOTOXICITY SEEN**

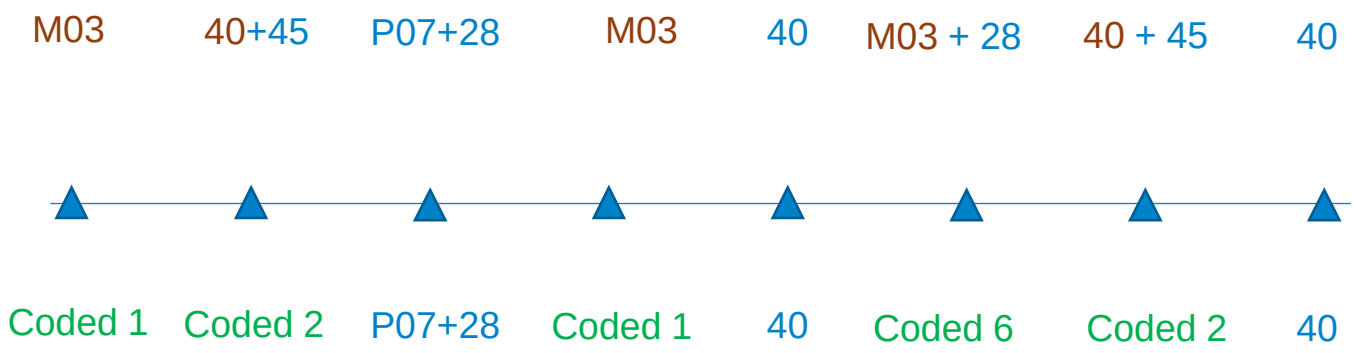
Where we are now

Product name	Active ingredient	Eradicant / protectant activity	FRAC	Maximum number of applications	Approval status	Expiry date
Amistar	Azoxystrobin	E/P	11	2	EAMU 3388/18	30/06/2027
Ranman Top	Cyazofamid	P	21	(2x3) 6	EAMU 1205/20	31/01/2024
Fubol Gold WG	Mancozeb + metalaxyl-M	P/E	M03 + 4	3	EAMU 2133/21	09/09/2099
Manzate 75 WG	Mancozeb	P	M03	8	On label	30/07/2026
Paraat	Dimethomorph	P/ anti-sporulant	40	2	EAMU 2585/11	31/01/2026
Percos	Ametoctradin + dimethomorph	P/ anti-sporulant	45 + 40	4	EAMU 0962/21	31/01/2026
Previcur Energy	Fosetyl-aluminium + propamocarb hydrochloride	E/P/ anti-sporulant	P07 + 28	2	EAMU 1845/13	31/10/2024
Proplant	Propamocarb hydrochloride	P	28	3	EAMU 0785/16	31/01/2026
Revus	Mandipropamid	E/P/ anti-sporulant	40	1	EAMU 2763/16	31/01/2026

Sustainable ICM

Summary

- Loss of mancozeb and dimethomorph
- Coded 6 product nearing ornamental approval
- EAMU work on Coded 1 product
- Coded 2 product also possible
- 2022 downy mildew control was very good
- Some concerns for 2023…….



Thank you