



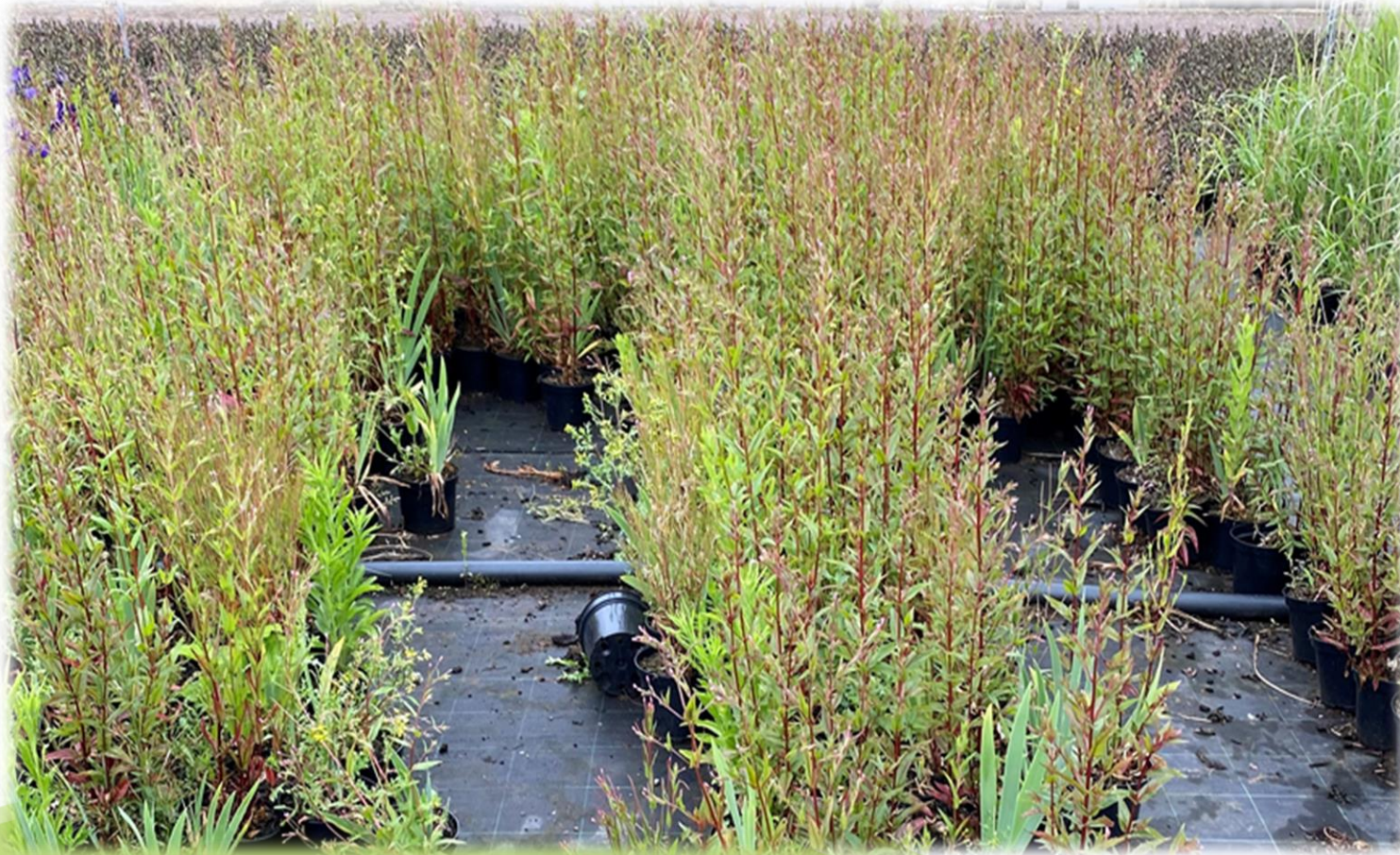
End-of-season weed control in field-
and container-grown ornamentals:
Challenges with contact herbicides
and timings of autumn/winter
residual herbicides

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What I will cover

- **End-of-season weed control**
 - Container-grown stock
 - Field-grown stock
- **Use of contact herbicides**
- **Timing of autumn/winter residual herbicides**

End-of-season weed control



Container-grown stock

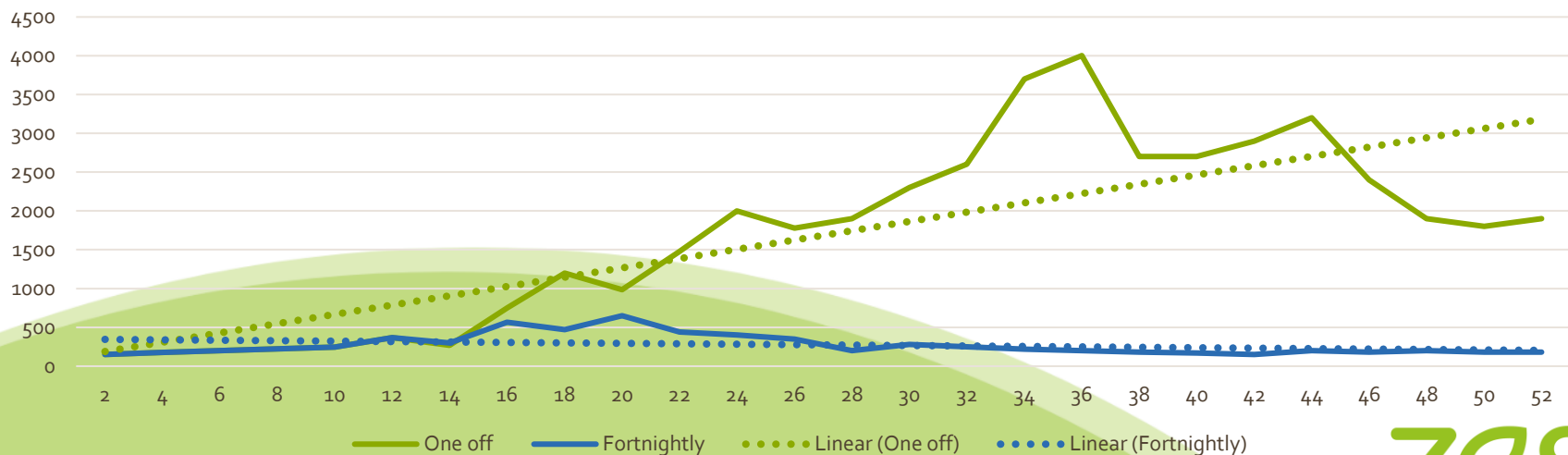


- ☐ Residual herbicides are running out – on beds and in pots
- ☐ Fast weed growth and therefore weed life cycle is shorter
- ☐ Labour challenges – lack of resource for non-cropped areas
- ☐ Fewer suitable weather conditions for spraying
- ☐ More stock on the ground
- ☐ Mulches starting to slump and less effective
- ☐ Less hand weeding due to cost
- ☐ Reduced efficacy on peat-based substrates

Container-grown stock

- ☐ Hand weeding usually seen as a 'time filler'
- ☐ It is not seen as a control method
- ☐ Hidden costs
- ☐ Is it actually done properly

Hand weeding over 12 months – 6 weekly vs fortnightly



Container-grown stock



Product	Active substance	HR AG	Solubility	Soil type	Dose rate, L/ha	Water volume, L	On/off label	Nº of applications	Herbicide type	Protected use	Expiry date
Devrinol (MAPP19358)	Napropamide – 45%	Z	Mod	All	7.0	1,000-2,000	0168/20	1	R	×	12/01/2024
Dual Gold (MAPP14649)	S-metolachlor – 96%	K3	Mod	All	0.78	200-400	0501/12	1	R	×	31/01/2024
Flexidor 500 (MAPP18902)	Isoxaben – 50%	L	Low	Mineral	0.5	600	✓	1	R	✓	30/11/2026
Sultan 50 SC (MAPP16680)	Metazachlor – 50%	K3	Mod	All	1.5	400-600	✓	1	R	✓	31/11/2025
Sencorex Flow (MAPP18895)	Metribuzin 60%	C1	High	Mineral	1.15 – 1.0	400-600	3103/19 3099/19	1	C, R	✓	31/01/2024
Venzar 500 (MAPP18799)	Lenacil – 50%	C1	Low	Mineral	0.4	100-200	4263/19	2.5	R	✓	30/06/2024
Sunfire (MAPP16745)	Flufenacet – 50%	K3	Mod	Mineral	0.48	200-400	1065/17	1	R	✓	30/04/2024
Springbok (MAPP16786)	Dimethenamid-p and metazachlor – 20% +20%	K3+ K3	High + Mod	All	2.5/ 1.6	200-400	2108/15 3006/14	1	R	×	09/09/2099
Wing-P (MAPP15425)	Dimethenamid-p and pendimethalin – 21.25% + 25%	K3+ K1	High + Low	All	3.5	400-600	0253/13	1	R	×	09/09/2099

Field-grown stock



- Secorex Flow
- Dual Gold
- Stomp Aqua
- **Glyphosate?**
- Shark

- Butisan
- Flexidor
- Betasana
- Dow Shield
- Goltix

- Springbok
- Sunfire
- Shark

- ☐ Soil conditions and equipment
- ☐ Size of the business and area grown
- ☐ Labour challenges
- ☐ Fewer suitable weather conditions for spraying
- ☐ Clash with lifting season
- ☐ Different weed spectrum
- ☐ Reduced efficacy

Field-grown stock

- ☐ Availability of equipment and sprayers
- ☐ Crop specific challenges
- ☐ More opportunity to use contacts - hardy
- ☐ Good use of selective contact herbicides over top of crops
- ☐ Inter-row spraying
- ☐ Hand weeding is limited

Field-grown stock



Product	Active substance	H R A G	Solu bility	Soil type	Dose rate, L/ha	Water volume, L	On/off label	Nº of applica tions	Herbici de type	Protec ted use	Expiry date
Stomp Aqua (MAPP14664)	Pendimethalin – 45.5%	K1	Low	All	2.9	200-400	2919/09	1	R	×	09/09/2099
Stomp 400 (MAPP13405)	Pendimethalin – 40%	K1	Low	All	3.3	200-400	2923/08	1	R	×	09/09/2099
Flexidor 500 (MAPP18902)	Isoxaben – 50%	L	Low	Mineral	0.5	600	✓	1	R	✓	30/11/2026
Sultan 50 SC (MAPP16680)	Metazachlor – 50%	K3	Mod	All	1.5	400-600	✓	1	R	✓	31/11/2025
Goltix 70 SC (MAPP16638)	Metamitron – 70%	C1	High	Mineral	2.0	200-400	1175/15	1.5	R	✓	28/02/2025
Defy (MAPP16202)	Prosulfucarb – 80%	K3	Low	All	5.0	200-400	1431/13	1	R	✓	30/04/2024
Wing-P (MAPP15425)	Dimethenamid-p and pendimethalin – 21.25% + 25%	K3 + K1	High + Low	All	3.5	400-600	0253/13	1	R	×	09/09/2099

Contact herbicides

- Used mainly for non-cropped areas and around crops
- Generally considered high risk herbicides
- Very little to no use over the top of crops due to direct impact on crop canopy damage or even crop loss
- Lack of clarity on approvals for total herbicides
- Water volumes
- Types of contact herbicides

Hormone (auxin) -type herbicides (soil + foliar applied)

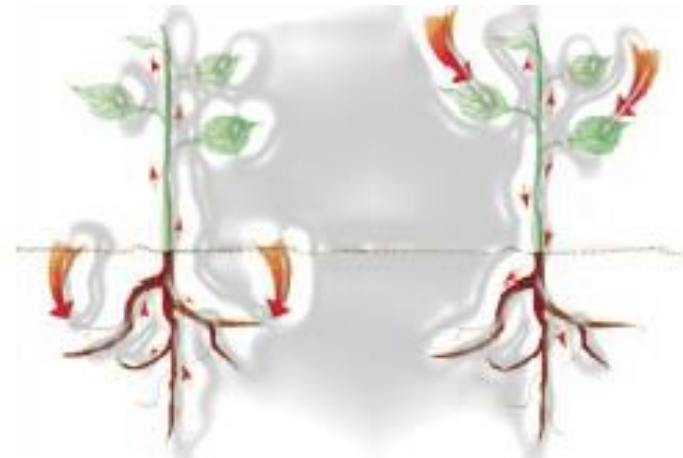


AIM: To affect growth in the newest stems and leaves

- 2,4-D, clopyralid, MCPA, fluroxypyr

Symptoms of injury

- ✓ Stunted, malformed seedlings
- ✓ New growth twisted and distorted
- ✓ Calluses form on stem; plant may lean and become brittle
- ✓ Grasses exhibit leaf rolling
- ✓ Injury likely from drift, tank contamination or direct application



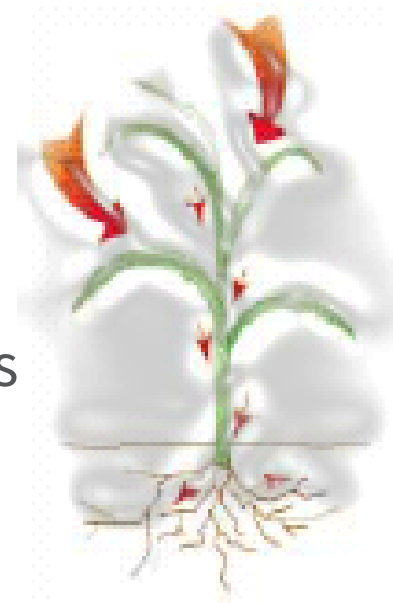
Meristematic (lipid) inhibitors (foliar applied)

AIM: To block formation of lipids in shoot (meristem) and roots of grass weeds

- Cycloxydim, clethodim

Symptoms of injury

- ✓ Symptoms slow to develop
- ✓ Plants become stunted when new growth ceases
- ✓ Growing point disintegrates and dies first
- ✓ Carry over unlikely at normal application rates; tank contamination and drift can affect crops
- ✓ Direct injury usually caused by adjuvants used with products



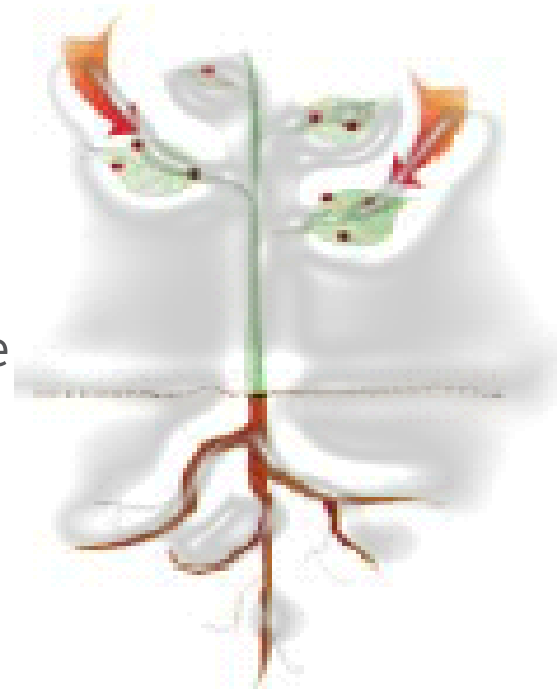
Photosynthetic inhibitors (foliar applied)

AIM: To block photosynthetic reaction; disrupt cellular membranes = light can't be converted into chemical energy

- Bentazone, diquat

Symptoms of injury

- ✓ Spray penetrates leaves and produces localised tissue
- ✓ Discoloration and death
- ✓ Plants become stunted and die if enough tissue is affected
- ✓ Carry over unlikely and drift injury limited to droplets from nearby applications
- ✓ Injury increased with addition of spray additives



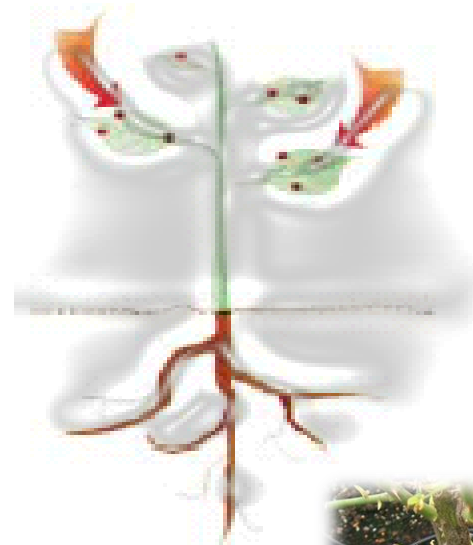
Protein biosynthesis inhibitors

AIM: To inhibit a key enzyme in the amino acid synthesis pathway

- Glyphosate

Symptoms of injury

- ✓ Slow chlorosis of tissue (10-14 days)
- ✓ Stunting
- ✓ Change in flower colour
- ✓ Systemic, non-selective action on tissue
- ✓ Inactivated on contact with soil



Challenges using contact herbicides



- Weather conditions
- Approval details
- Timing of applications
- Coverage of weed canopy
- Unless total herbicide, selectivity could be an issue
- Risk of damage to crops

Autumn/winter residual herbicides



- ☐ Autumn starts in August/September
- ☐ Maximise use in dormant season
- ☐ Attention to herbaceous perennials and deciduous woody shrubs
- ☐ Planning herbicide applications prior to leaf fall
- ☐ Use contact herbicides with appropriate timing
- ☐ Total herbicides in dormant season
- ☐ Water volumes

Herbicide subjects for today

Angela Huckle

- Metribuzin
- Clomazone
- Bentazone
- Pyridate
- Florasulam

Selchuk Kurtev

- Glyphosate
- Pelargonic acid
- Carfentrazone-ethyl
- Clopyralid and picloram
- Fluroxypyr
- Phenmedipham
- Clethodim and cycloxydim

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