

SCEPTREPLUS



Sceptre Plus: developments with weed control on ornamentals

David Talbot, ADAS Horticulture

SCEPTREPLUS

- Main objective was to expand industry knowledge of residual herbicide crop safety and effectiveness following the loss of linuron
- Residual herbicides already authorised for use in ornamentals plus some new products
- Effective against common weeds for at least 10 weeks
- Persistent enough to ensure crop establishment



Treatment timing and results

- Treatments applied just prior to crop emergence approximately 2 weeks after planting in 200 L/ha.
- Assessed for weed cover at 2, 6 and 10 weeks after treatment.
- No delays in crop emergence compared to untreated
- No evidence of crop damage / phytotoxicity caused by any of the herbicide treatments
- No treatment effects on flower development or colour, no significant effect on stem weight
- Significant weed control after 10 weeks in 8 experimental treatments

SCEPTREPLUS

AHDB

Conclusions



- Sencorex Flow, Wing-P and Springbok were the best treatments available at the time the trial was completed
- Unsurprisingly Sunfire did not deliver brilliant weed control when used alone (Predominantly used for control of grass weeds)
- Potential to use Sunfire in tank mixes to improve weed control further (worth checking crop safety)

SCEPTREPLUS AHDB

SP30 Evaluation of residual herbicides on Sweet William



Background:

- The loss of oxadiazon (e.g., Ronstar) has complicated weed control as the crop is very sensitive to herbicides
- Band spraying with GPS is successfully used in other crops

Main objective was to apply a weaker herbicide mix of Goltix (1L/ha) + Stomp Aqua (0.75 L/ha) as an overspray prior to applications of stronger inter row treatments to individual plots. expand industry knowledge of residual herbicides crop safety and effectiveness following the loss of linuron

- Residual herbicides already authorised for use in ornamentals plus some new products
- Effective against common weeds for at least 10 weeks
- Persistent enough to ensure crop establishment



SP 30 Evaluation of residual herbicides on Sweet William treatment timing and results



- Treatments were applied 3 days post drilling, prior to crop emergence as an inter row treatment in 300 L/ha.
- Assessed for weed cover and crop safety at 3, 6 & 12 weeks after treatment
- Significant delay **and reduction** in emergence of some treatments (Springbok, Defy, One coded product), some slight yellowing initially but crop grew away from this.
- Where crop emerged no major crop damage / phytotoxicity throughout the trial
- Stomp Aqua at 2.9 L/ha is a suitable commercial treatment (no detrimental effect on germination) resulting in 7.75% weed cover at 12 weeks after treatment

AHDB SCEPTREPLUS

SP 30 Evaluation of residual herbicides on Sweet William Conclusions



- Although Stomp Aqua alone performed well there are gaps in its weed control spectrum
- Number of products including two experimental products appeared to be crop safe (Stomp and Defy seemed safe but Defy alone too damaging at rate tested so interpret with caution) with no phytotoxicity and good crop emergence
- EAMU submitted for the promising experimental product 'AHDB 9947'
- Where products reduced emergence, it may be possible to reduce the rate without substantially affecting weed control efficacy
- Applying residual herbicides as a precision band between crop rows appears to be a useful method to control weeds with a broader range of actives than can be applied over the crop rows, with reduced impact upon the crop.

AHDB SCEPTREPLUS

SP53 Implications of different growing media blends on performance, persistence and leachability of herbicides in container grown crops



Main objectives

1. To investigate the implications of different growing media blends on the **performance of herbicides** on container grown crops
2. To investigate the implications of different growing media blends on the **persistence** of herbicides in container grown crops
3. To investigate the implications of different growing media blends on **leachability** of herbicides on container grown crops

AHDB SCEPTREPLUS

SP53 Implications of different growing media blends on performance, persistence and leachability of herbicides in container grown crops



Background

- Evaluation of whether the move to **peat reduced** and **peat free** blends impacts upon the way herbicides behave in growing media
- Four Mixes: 70% peat, 50% peat reduced and 2 peat free blends
- Three Herbicides: Flexidor (isoxabin), Dual Gold (s-metolachlor), Sunfire (flufenacet)
- 2L pots outside with overhead irrigation – all leachate collected
- Leachate collected and tested 1 week and 17 weeks after herbicide application
- Also, another trial with efficacy component in different blends with Cress, Annual meadow grass and Hairy Bittercress as test subjects sown 1 day and 14 days after herbicide application



SP 53 Implications of different growing media blends on performance, persistence and leachability of herbicides in container grown crops , results



Dual Gold (s-metolachlor)

- Growing media components did not impact on persistence or performance of this active
- High levels of s-metolachlor found in the leachate of all growing media blends after 1 week, no traces in any blend after 17 weeks

Flexidor (isoxabin)

- Significant difference between the 4 growing media blends for both sowing dates
- **Highest amount of cress germinated in the 70% peat blend**, lowest amount in the peat free blends
- Levels of isoxabin found in the leachate 1 week after treatment were relatively low compared to the other herbicides assessed.
- Traces of isoxabin found in the leachate of all 4 blends at 17 weeks after treatment , showing that Flexidor persisted in all 4 mixes
- Persistence and performance should not be adversely affected by the different growing media blends assessed
- Weed control appeared to be better in the peat free products compared to the 70% peat-based blend

Sunfire (flufenacet)

- Results suggested that different growing media components do not impact on the performance of this herbicide
- High levels of flufenacet found in the leachate from all four growing media blends although **one peat free did appear to be reducing the loss of flufenacet** compared to other mixes, no traces in any blend after 17 weeks

SP 53 Implications of different growing media blends on performance, persistence and leachability of herbicides in container grown crops, Conclusions



- Different growing media blends do not appear to impact on the persistence or performance of Dual Gold (s-metolachlor) or Sunfire (flufenacet)
- There does appear to be an interaction between growing media blend and Flexidor with reduced emergence in the peat free blends
- Leachate appears to be related to the solubility of the active ingredient, the association between the media and the active ingredient is less clear
- Further work is required to better understand the interaction between growing media components and herbicides

Objective

- To identify safe herbicides for weed control in dormant narcissus to expand weed control options and minimise the risk of resistance to key actives developing

Background

Limited range of herbicides were available for safe application during the dormant season which left gaps in the weed control spectrum resulting in some weeds being difficult to control. The loss of linuron compounded the issue and resulted in the need to find alternative actives with similar efficacy

- Newly planted crop of Narcissus Fortune, Lincolnshire
- Glyphosate applied at 3.75 L/ha to before experimental treatments
- Treatments applied in 200 L/ha 21st Nov, second application to T8 & 9 20th Jan
- Assessed at 2, 4, 6, 10 & 16 weeks after treatment for % weed cover, weed species and crop phytotoxicity.

SP 18 Narcissus dormant herbicide screen results



- All treatments significantly reduced weed cover for up to 16 weeks
- No significant effect on crop quality (leaf height, number of buds per meter, flower quality or size)
- The only significant impact was from Hurricane SC (diflufenican) resulting in significantly less emerged leaves on 30th Jan, however no significant reduction in the number of buds per meter
- Hurricane SC known to be persistent and may have delayed leaf emergence
- Hurricane SC was tank mixed with Wing-P there was 0% weed cover at the 16-week assessment
- All treatments considered safe to apply as dormant season treatments



- All treatments significantly reduced weed cover at every assessment and were considered crop safe
- Metobromuron (Praxim) is a useful and safe alternative to linuron when tank mixed with Sencorex Flow and / or Stomp Aqua.
- Nirvana was safe but has not yet been tested in tank mixes
- An EAMU is under consideration for AHDB 9921
- AHDB 9994 would be a useful addition for shepherds' purse, annual meadow grass and small nettle – in discussion to see if an EAMU is possible.
- Meeting with company to discuss potential EAMU for AHDB 9917

Objective

- To identify safe herbicides for weed control over the crop post cropping, after flower harvest to expand the limited range of options

AHDB SCEPTREPLUS

Background

- Crop of Narcissus Lowan, Cornwall
- 15 treatments applied 19 March
- Treatments applied in 200 L/ha
- Assessed at 2, 4, 6, 10 weeks after treatment for weed cover and crop phytotoxicity.

SP 18 Narcissus post cropping herbicide screen results



- Ten of the treatments resulted in significantly lower weed compared to untreated
- Wing – P at 3.5 L/ha and Lector 0.1 L/ha reduced weed cover by at least 75% and gave a significantly greater reduction in percentage weed cover than the standard of Kerb Flo 3 L/ha and Stomp Aqua at 2.9 L/ha
- AHDB 9865 effective and safe post cropping with no adverse effect to foliage in year of application or to flowering the following spring
- AHDB 9921 resulted in marked wilting and collapse of leaves
- Significant crop effects with Butryflow, AHDB 9994 and AHDB 9990 resulting in early senescence.

AHDB SCEPTREPLUS

SP 18 Narcissus post cropping herbicide screen

Conclusions



- Wing P at 3.5 L/ha and Lector 0.1 L/ha and **AHDB 9865** inter row combined effective weed control and were crop safe when applied post cropping
- EAMU for **AHDB 9865** has been agreed and is in preparation
- Ten of the treatments resulted in significantly lower weed than untreated for up to 10 weeks after treatment reduced weeds by at least 40%
- Two of the coded products (AHDB 9900 and 9994) and Butryflow resulted in earlier senescence than untreated controls. AHDB 9994 safe when crop is dormant, potential for EAMU.
- AHDB 9921 is not safe to use at this growth stage but safe when crop is dormant.

AHDB SCEPTREPLUS

Thanks – any questions?

- AHDB
- ADAS colleagues
- Growers hosting trials

- See reports in full via AHDB resources:

<https://horticulture.ahdb.org.uk/cp-165-sceptreplus-research-for-sustainable-plant-protection-products-for-use-in-horticulture>

AHDB SCEPTREPLUS