



Grower Summary

**Bedding and Pot Plant Centre Work Package 3:
Programming herbaceous Salvia for production
as impact bedding plants**

PO 019d

Final report

Project title: Bedding and Pot Plant Centre Work Package 3: Programming herbaceous *Salvia* for production as impact bedding plants

Project number: PO 019d

Project leader: Dr Jill England, ADAS Boxworth

Report: Annual report

Previous report: n/a

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Location of project: Bryant's Nurseries, Water Lane, Bovingdon, Hemel Hempstead HP3 0NA

Industry Representative: Chris Need

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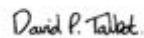
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AUTHENTICATION

We declare that this work was done under our supervision according to the procedures described herein and that the report represents a true and accurate record of the results obtained.

David Talbot
Senior Horticulture Consultant
RSK ADAS

Signature



Date 31.03.2023

Thomas James
Senior Field Research Scientist
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Signature

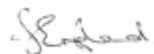


Date 31.03.2023

Report authorised by:

Dr Jill England
Technical Director, Head of Horticulture
RSK ADAS

Signature



Date 31.03.2023

Grower Summary

Headline

- Five out of six varieties of *Salvia* marketable in flower (for summer sales from week 25 and 27 respectively) from week 16 and week 19 transplant
- *Salvia greggii* 'Joy' and *Salvia microphylla* 'Hot Lips' marketable within five and four weeks of week 16 and week 19 transplant respectively
- *Salvia* 'Big Blue' shy to flower in 1 L pots; larger pot size would be more appropriate
- Plant growth regulators (PGRs) were used to produce more compact 'pot plant' product : Dazide Enhance (4 g/L) and Bonzi (1 ml/L), applied in 300 L/ha water
- Temperature sensitive subjects such as *Salvia* 'Amistad' and S. 'Rockin Deep Purple' may be more suited to production under heated glass.

Background

The Bedding and Pot Plant Centre (BPPC) has been established to address the needs of the industry via a programme of work to trial and demonstrate new product opportunities and practical solutions to problems encountered on nurseries.

Breeders, seed houses and plant producers continually develop new breeding lines and growers select those with visual appeal for consumers, precocious flowering lines, attractive colour ranges, and intrinsic branching habits; plants with genetics that impart resistance to pests and diseases, but also compact plants that require no or minimal application of plant growth regulators, that are easily scheduled whilst being suitable for a range of markets, enabling premium quality plants to be produced with minimum inputs.

This trial compares the production of herbaceous *Salvia* transplanted into 1 L pots on two transplant dates, with and without PGR applications.

This is the Bedding and Pot Plant Centre report for:

Objective 3. Programming herbaceous *Salvia* for production as impact bedding plants

Summary

Six *Salvia* varieties (*Salvia* 'Amistad', *Salvia* 'Big Blue', *Salvia greggii* 'Joy', *Salvia microphylla* 'Hot Lips, *Salvia* 'Rockin Deep Purple' and *Salvia* 'Wendy's Wish') were transplanted into 1 L pots at Bryant's Nurseries, Bovington, Hemel Hempstead in week 16, and week 19, 2021, and grown on under polytunnels (**Figure 1**). While some cultivars had been pinched by the supplier, 'Wendy's Wish', 'Amistad' and 'Big Blue' (week 16 trial), and 'Rockin Deep Purple' (week 19 trial) were pinched at Bryant's Nurseries. The replicated trial was set out with each

plant species having a 'PGR applied' and a 'non-PGR' treatment. PGRs were applied only if necessary and on the advice of the grower. Plant growth regulators (PGRs) were applied by the grower to PGR plots only: Dazide Enhance (4 g/L) and Bonzi (1 ml/L), applied in 300 L/ha water. Plants were monitored for pests and disease throughout the trial.

A drench of Subdue (metalaxyl-M; 18.75 ml/100 m²) was applied to *S. g.* 'Joy' to control root rot.



Figure 1. Week 16 (left) and week 19 (right) trials at set-up

Main outcomes:

Salvia 'Amistad' proved sensitive to the cold conditions early in the trial (**Figure 2**), causing leaf chlorosis, and could benefit from production under heated glass. While some plants appeared to grow through this, damage continued to be evident for others. The plug plants for the week 16 trial had particularly long internodes, requiring an early PGR application which somewhat improved plant form.



Figure 2 Cold damage on *Salvia* 'Amistad' (left). Lower leaf speckling on *S.* 'Big Blue' (right)

Salvia 'Big Blue' plants were attractive, with large blue-green leaves. However, they were slow to establish and did not flower before the end of either trial in 1 L pots. They may be

better suited to production under warmer conditions and in larger pots. 'Big Blue' quality was slightly affected by lower leaf speckling (**Figure 2**).

Salvia greggii 'Joy' flowered early, with plants marketable by five and four weeks post-transplant (week 16 and week 19 trial respectively). However, *S. g.* 'Joy' was susceptible to stem base / root disease which caused plant losses, leaving remaining plants often brittle and easily damaged. Care should be taken to provide unfavourable conditions for these pathogens by letting the growing media dry out before irrigating, particularly in a cool spring when it can take longer for growing media to dry back. This variety may also benefit from cutting back to help produce a strong plant base.

Salvia microphylla 'Hot Lips' flowered early, similar to *S.g.* 'Joy' with plants marketable by five and four weeks post-transplant (week 16 and week 19 trial respectively). The flowers have a white upper lip and red lower lips but petal colour is influenced by temperature and can be predominately red in cool, moist conditions and white in hot, dry conditions.

Salvia 'Rockin Deep Purple' was sensitive to cold conditions, which caused leaf chlorosis, but was less affected than *Salvia* 'Amistad'.

Salvia 'Wendy's Wish' plugs (week 16 trial) had long internodes on delivery, similar to *S.* Amistad, requiring an early PGR application which improved plant form.

Plant height. While significant effects on plant height due to the PGR applications were not recorded, plants treated with PGRs were consistently shorter than their untreated counterparts by the final assessment (week 27) in the week 19 trial. PGRs are more effective in warm conditions than cold, as plants are more active.

Temperature impacted on plant growth, with low temperatures causing damage to susceptible plants, while others may benefit from being moved outside as the polytunnel temperature rises to help control growth. There is a balance to be struck in respect of temperature – avoiding damaging low / fluctuating temperatures for susceptible plants, but moving other plants outside in cooler conditions to help control growth potentially, reducing the need for PGRs.

Financial benefits

The popularity of herbaceous *Salvias* has continued to increase, predominately in 2 L pots; few appear to be available in 1 L pots.. Retail prices in March 2023 range between £7.50 and £7.99 for a 2L pot; or a collection of three plants for an average £16.50. There appears to be little variation in price between different species.

Herbaceous *Salvias* continue flowering into the autumn, however there may be gains to be made on returns through early production, with early marketing of species that are quick to flower, such as *S.* 'Hot Lips' and *S. g.* 'Joy'. However, this will require careful selection of species: Focus on selecting disease resistant and cold tolerant species

Action points

- Consider pot size, and carefully match variety to an appropriate pot size to achieve the greatest impact. While *Salvia greggii* and *S. microphylla* varieties may be suitable for production in 1 L pots, larger pot sizes, potentially with multiple plants per pot, maybe more suitable for larger varieties, for example *Salvia* 'Big Blue'
- Produce temperature sensitive varieties under glass, heated as appropriate to the prevailing conditions to avoid physiological damage. This would apply to 'Amistad' and 'Rockin Deep Purple' and related varieties.
- Specify compact plug plants from suppliers of more vigorous varieties and pinch if this hasn't been done by the propagator. *S. g.* 'Joy' would likely benefit from cutting back to produce a stronger plant, although this would delay flowering. Use PGRs, applied before internode extension, to control growth of the more vigorous varieties.
- Take care to allow the growing media to dry back before irrigating susceptible species such as *S. g.* 'Joy', to provide unfavourable conditions for pathogens.