

Title The use of cold storage as a scheduling aid in bedding plant production
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Abstract

Commercial production schedules for UK bedding plants are constructed to meet well understood consumer purchasing habits, yet the precise timing of demand can be significantly affected by unseasonal climatic conditions. Unfavourable weather during spring, for example, can drastically reduce early season sales and result in the undesirable situation of market-ready stock having to be held at the suppliers. Cold storage is an option that can be used to restrict further development of these plants, limit their requirement for growth regulators and avoid congestion in valuable production areas. In this study plug plants of 10 subjects (*Alyssum*, *Antirrhinum*, *Begonia*, *Geranium*, *Impatiens*, *Lobelia*, *Marigold*, *Petunia*, *Salvia* and *Verbena*) were placed at 4 or 8°C for up to four weeks without the application of growth regulators. Two control groups were held under glasshouse conditions for a similar period, one being treated with the growth regulator paclobutrazol according to commercial practice and the other untreated. Seventy two plugs of each species were removed each week, transplanted into retail packs and grown on under commercial glasshouse conditions. All plants were assessed weekly for quality and survival from their introduction into the glasshouse until flower buds formed. Plug death during cold storage resulted from *Botrytis* infection with those stored at 8°C being particularly susceptible. Plant mortality after transplantation varied with species but after one week of storage minimal losses (<3%) were observed in all species and treatments. With the exception of *Impatiens*, cold storage for up to 4 weeks had a limited effect on plant quality and mortality. For storage beyond 2 weeks mortality at 4°C was lower than at 8°C. The results demonstrate that for a wide range of bedding plant subjects cold storage at 4°C is a feasible technique for use in production scheduling, to ease short-term pressure on production space and accommodate unpredictable fluctuations in market demand.