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Information

Holding Nursery Stock plants back

At this present time with sales being weak nurseries are experiencing high stock levels of saleable crop and want to hold it back. Follow-on crops too need to be held back until sales levels are at a higher level. There are things that can be done on the nursery that will delay growth and slow down maturity and hold the plant back.

Temperature (DIF)
Lower the air temperature of the crop in the day. Opening tunnel doors and lifting up the sides during the day will reduce daytime temperatures. To avoid extreme differences between day and night temperatures which tends to give some crops a crinkled leaf in the growing point, close them both up at night. Having a warmer night period and cooler day reduces the top growth rate.

Feeding
If you are using CRF as the sole source of crop nutrient there is not much opportunity to amend the feeding regime. If you are liquid feeding then switch to a high Potash feed rather than high Nitrogen which will reduce top growth and harden up the plant. Using a 1:0:3 product is the most effective N:K ratio. DO not just reduce feed or deficiency symptoms can develop.

Brushing
Theoretically, plants release a small amount of the plant hormone ethylene when they are touched or moved (by people, the wind, etc.). With repeated and frequent plant movement, plants release enough ethylene to inhibit elongation. Research has shown that plants generally respond in a quantitative manner to the number of times they are brushed: The more frequent the brushing, the more suppression of stem elongation. This suggests that brushing plants is like repeatedly providing a very low concentration of Floralife tulipa (ethephon) to plants. Brushing can be effective on a wide range of bedding plants and potted plants, including chrysanthemum and irrigation booms have been effectively used but be careful that you don't brush plants with too much force,

Cold stores
If you have cold store space available or can rent space, many crops can be held back by a period in a cold store. The short term hire of a 20' or 40' refrigerated container or trailer make ideal cold stores and you can also hire an inflatable cold store. Contact your haulage contractor as they may have units available too.

Bare root material can be stored at between -4° and +2° C whereas finished plant material can be stored down to 3°C. If you are taking crops straight from the tunnel or glasshouse drop the temperature in the cold store gradually over a few days to avoid a shock. See the AHDB Cold Storage Growers Guide. A summary table from it is shown below:

Optimum storage temperatures for a range of HNS species

1°C	1-2 °C	1-3 °C	5-6°C	Unsuccessful
Garrya	*Azaleas*	*Amelanchier*	*Dicentra*	***Erica***
Choisya	*Philadelphus*	*Clematis*	*Euphorbia*	***lusitanica***
Daphne	*Hydrangea*	*Hamamelis*	*Hosta*	***Cordykne***
Escallonia	*Pieris*	*Rhododendron*	*Polygonatu*	
Eleagnus	*Cytisus*	*Camellia*	*m Brunnia*	
Viburnum		*Forsythia*	*Ceanothus*	
Clematis		*Laburnum*	*Viburnum*	
Skimmia		*Malus*	*Deutzia*	
Japanese		*Viburnum*	*Spirea Pieris*	
Acer		*Dicentra*	*Terria*	
Magnolia		*Brunnia*	*Amelanchier*	
Cypressus		*Polygonatum*	*Clematis*	
Decrus			*montana*	
Prunus			*Acer*	
Actinidia			*Magnolia*	
Erica			*Prunus*	
`Albert's			*Malus*	
Gold'			*Wisteria*	
			Solanum	
			'Glas nevin'	

Regulated Deficit Irrigation

RDI uses a targeted degree of water stress to regulate plant growth rates. The technique does require a degree of control in getting the moisture level in the substrate right. Work done at East Malling in 2006 showed that reducing water during normal periods of rapid extension growth and then restoring to normal levels as the crop nears maturity will reduce extension growth. The potential to control excess vigour and to improve quality through regulated deficit irrigation (RDI) was investigated using a range of woody ornamental species. RDI regimes reduced vegetative growth consistently across different species and growing seasons. Plants adapted to reduced water supplies primarily via stomatal control, but also by osmotic adjustment when grown under the most severe RDI regimes. Only plants exposed to ≤ 25% of potential evapo-transpiration demonstrated any evidence of leaf injury, and the extent was slight. Growth inhibition increased as the severity of RDI increased.

Compact, well-branched plants could be formed without a requirement for mid-season pruning. In addition to severity, the timing of RDI also influenced growth responses. Applying 50% ETp for 8 weeks during July-August resulted in the formation of good quality plants, which retained their shape until the following Spring. Re-positioning irrigation drippers within the pots of well-watered plants, in an attempt to induce a partial root drying (PRD) treatment, reduced growth, but not significantly. The adoption of irrigation scheduling, based on 50-100% ETp, has the potential to improve commercial crop quality across a range of ornamental species.

Pot size

Keeping plants in a small pot and restricting root growth will restrict growth. Trimming and delaying potting-on, will reduce overall size of a plant for a while.

Growth regulators

We still have some growth regulators available and those approved for HNS are listed below. The rates of the products are shown on the EAMU or product label. We do have some information on specific rates for some crops and you can call for or download details.

Light levels

Giving plants adequate space and light will avoid stretching. Clean glass and polythene with a wider crop spacing all help. Choose clear polythene structures in favour of white or coloured.

HNS growth regulator approvals in UK as at 29th February 2020

Product name	Active ingredient(s)	LERAP required?	Formulation	MAPP no	On-label?	EAMU?	EAMU issue no	Situation	Expiry
Agrovista 3 See 750	chlormequat	✕	P	15975	✔			ornamental plant production	31/05/2020
Attraxor	prohexadione	✕	P	18939	✔			managed amenity turf	30/06/2024
B-Nine SG	daminozide	✕	P	14434	✔			ornamental plant production (protected)	30/04/2023
B-Nine SG	daminozide	✕	P	14435	✔			ornamental plant production (protected)	30/04/2023
Bonzi	paclobutrazol	✕	P	17095	✔			ornamental plant production (protected, container	30/04/2020
Bonzi	paclobutrazol	✕	P	17576	✔			ornamental plant production (protected, container	30/11/2025
Canopy	mepiquat (as chloride) and prohexadione calcium	✕	P	16314		✔	2019-4484	Permanent protection with full enclosure ornamental plant production grown in synthetic/inert media, Protected and outdoor ornamental plant production - container grown crops	31/08/2022
Cerone	ethephon	✕	P	15944		✔	2012-2366	onamental plant production	31/01/2023
Cerone	ethephon	✕	P	18903		✔	2019-3091	onamental plant production	31/01/2023
Configure	6-Benzyladenine	✕	P	17523	✔			ornamental plant production (permanent protection with full enclosure)	22/03/2020
Cutaway	trinexapac-ethyl	✕	P	14445	✔			amenity grassland	31/10/2022
Cutaway	trinexapac-ethyl	✕	P	14445		✔	2016-2140	forest nursery, ornamental plant production	31/10/2022
Dazide Enhance	daminozide	✕	P	16092	✔			ornamental plant production (protected)	30/04/2023
Fazor	maleic hydrazide	✕	P	13679		✔	2008-2790	amenity grassland	31/10/2020
Fazor	maleic hydrazide	✕	P	13679		✔	2011-1726	amenity vegetation (trees)	31/10/2020
Fazor	maleic hydrazide	✕	P	13679		✔	2016-0184	amenity grassland	31/10/2020
Fazor	maleic hydrazide	✕	P	13679		✔	2016-0185	amenity vegetation (trees)	31/10/2020
Fazor	maleic hydrazide	✕	P	19075		✔	2020-0373	Mature street trees	09/09/2099
Fixor	1-naphthylacetic acid	✕	P	17428		✔	2018-1213	Christmas trees	30/06/2024
Floralife Bulb 100	6-Benzyladenine+gibberellin	✕	P	17995	✔			ornamental plant production (post harvest use)	28/02/2023
Floralife Tulipa	ethephon	✕	P	17996	✔			ornamental plant production (post harvest use)	31/01/2022
Gibb 3	gibberellic acid (GA3)	✕	P	17013		✔	2019-4261	outdoor ornamental plant production	28/02/2023
Mowless	trinexapac-ethyl	✕	P	17086	✔			amenity grassland, managed amenity turf	31/10/2020
Pirouette	paclobutrazol	✕	P	17203	✔			ornamental garden plants (protected, container grown)	30/11/2025
Pirouette	paclobutrazol	✕	P	17203		✔	2017-1269	Permanent protection with full enclosure ornamental plant production (drench)	30/11/2025
Primo Maxx II	trinexapac-ethyl	✕	P	17509	✔			amenity grassland, managed amenity turf	31/01/2022
Primo Maxx II	trinexapac-ethyl	✕	P	17509		✔	2018-0621	forest nursery, ornamental plant production	31/10/2022
Regalis Plus	prohexadione	✕	P	16485		✔	2019-2153	protected ornamental plant production	30/06/2025
Regulex 10 SG	gibberellins	✕	P	17158	✔			forest nursery (seed)	28/02/2022
Stabilan 750	chlormequat	✕	P	09303		✔	2017-1416	Ornamentals permanent protection	31/05/2020
Terpal	ethephon+mepiquat	✕	P	16463		✔	2018-0151	ornamental plant production - container-grown crops	31/01/2023