

## HERBACEOUS PLANT PRODUCTION AT BLOOMS OF BRESSINGHAM LTD.

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The company employs approximately 180 to 190 staff throughout the year with some seasonal fluctuations. The herbaceous growing side of the company has three main departments where we have a relatively fixed staff.

In the open ground 110 acres are farmed and rotated with arable land every two years. A great advantage we have is a wide range of soil types in such a small area: fen peat, sands, gravels, heavy clays, and good loams. The department has a regular staff of 22 people which do mainly seasonal work, e.g. hoeing, planting, splitting, and order-lifting for despatch once the season starts, i.e. September to April.

In the container department, with 950,000 plants being potted, we have a fixed staff of 5, dealing with 5 acres of standing ground with some seasonal fluctuations in staff. They mainly deal with despatching orders, growing on, and watering the plants.

The propagation unit and stock growing area has 9 fixed staff which supply material both to the open ground and container departments for growing on for sale. The unit grows plants from seed, cuttings in cold frames, tips in the mist, and root cuttings.

The herbaceous section thus has 36 full time staff which remains fairly constant throughout the year.

### THE OPEN GROUND SECTION

This section starts its main propagation from divisions in December when bulk items are lifted for storing in a facility which is frost-free.

**December.** We lift 3 bulk crops with approximately 70 to 80,000 *Astilbe* which are put into winter storage. *Hosta*, approximately 100,000 for winter splitting, and *Hemerocallis* 50,000. We also lift, for winter storage, corms of *Crococsmia* and these are dried and sorted and then replanted the following spring.

**January** onwards. We start propagation on these 3 items: *Hostas* are probably the most interesting; we are using a technique devised by Maurice Prichard when he worked at Bressingham. We take out the apical dominance of a crown bud and slice the remainder into quarters. There is no treatment after this. The normal divisions are put outside in trays and we plant them when they begin to shoot. The cutups are laid in beds outside until they shoot in June and these are then planted. These beds can be

protected in very cold weather by covering with a floating plastic material. This conventional method is too slow to bulk up cultivars quickly. Therefore, micropropagation is being used more now, on new cultivars such as *Hosta* 'Halycon', which has a good blue foliage. *Hosta* 'August Moon', is a good late colouring golden cultivar. *Hosta* 'Krossa Regal', is a quite outstanding upright blue/green foliage cultivar.

**Astilbes.** These are propagated by a straightforward splitting operation. We have one or two outstanding cultivars—the best is *Astilbe* 'Snowdrift', a nice intense white flowered cultivar. Old favourites are 'Fanal', good, deep red, and 'Federsee', a cerise pink. Look for some interesting dwarf cultivars to be introduced. *Astilbe simplicifolia* 'Sprite' is now readily available.

**Hemerocallis:** We have a considerable number of new cultivars coming on: *Hemerocallis* 'Bejewelled', two-toned pink; *Hemerocallis* 'Canary Glow', an orange-yellow; *Hemerocallis* 'Luxury Lace', a fine pink; and *Hemerocallis* 'Cherry Cheeks', a nice red.

Propagation, in the conventional way, takes place in January. The plants then stand outside in trays, covered with straw. After they shoot, the covering is taken off and the crop is planted as soon as we can get on the land.

**February.** There is a slight delay in propagation as orders take precedence in February, but our "rough split" plants must be done. These can then be planted in March or April. *Geranium pratense*, *Geranium* × *magnificum*, *Geranium* 'Claridge Druce' and *Geranium sylvaticum* types will take fairly rough handling. *Iris sibirica* cultivars can also be done at this time. *Iris sibirica* 'White Swirl' is a clear white. *Iris sibirica* 'Persimon' is a large-flowered deep purple. *Ligularias* are easy to handle. *Coreopsis verticillata* 'Grandiflora' can be done at this time, too.

**March.** We will carry on with the *Trollius* and then the *Aconitum* which, as soon as they start to shoot, must be split. *Aconitum* 'Ivory' is a good, white-flowered cultivar, which can also be propagated from seed in some years.

*Dicentra spectabilis* and *Dicentra spectabilis* 'Alba', as soon as they show above the surface, must be pulled down with hammers and planted immediately.

*Tradescantia* cultivars are done in March, too. *Pulmonarias* can be done either in January before they flower or after they flower in March. Useful cultivars are: *Pulmonaria saccharata* 'Argentea', *Pulmonaria angustifolia* 'Azure' and *Pulmonaria saccharata* 'High-down'.

**April:** We deal with the softer cultivars which should be taken and planted the same day. *Chrysanthemum* × *maximum* 'Wirral Supreme', the dwarf *C.* × *maximum* 'Snowcap', and the *Erigeron* cultivars are very impressive, early summer-flowering plants and



quite dwarf. *Astrantia major*, *Astrantia* 'Marjery Fish', *Astrantia major* 'Rubra' and *Astrantia major* 'Rosea' are ideal cut flower and dried flower plants. *Centaurea*, 'John Coutts', *C. dealbata* 'Steenbergii', *Allium schoenoprasum* 'Forescate' can also be done in April.

**May:** We have rounded up the majority of plants in the field. *Geranium* 'Johnson's Blue', *Geranium himalayensis* (syn. *G. grandiflorum* var. *alpinum*), and *Geranium grandiflorum* 'Plenum' will take winter splitting, but we like to leave them until they have grown in the spring before we do so. *Geum* 'Georgenberg' and *Geum* × *borisii* can be split and taken as cuttings, or divided and field-planted. *Knifophia* can now be done. *Aster*, *Monarda*, *Sidalcea*, *Stachys oenothera* (the evening primrose), and *Achillea millefolium* 'Cerise Queen', can also be propagated now.

**June:** We like to have cleared the field by now of the 2,000 different cultivars which have to be done. The odd ones, like *Gaillardia*, *Schizostylis*, *Doronicum*, and *Caltha palustris* 'Plena' are still left to do as they flower early so are dealt with later.

**July:** The May flowering, dwarf iris can be lifted, split then replanted on a 2-year bed system to allow them to bulk up in the first year, then in the second to split and flower and grow.

**August:** The tall, bearded iris and *Paeonia lactiflora* cultivars are done on a 2-year bed system. Two-year bed plants are: *Iris pumila*, tall, bearded iris cultivars, *Hosta*, *Paeonia lactiflora*, *Agapanthus*, and *Crocasmia*.

## GROUND PREPARATION

Ground preparation is done by various machines, a "shaker-racker" vibrator breaks up any subsoil pan there may be. Power harrows or ordinary tines follow.

A base dressing is put on; up to July 300 lbs per acre of 16/8/24 fertilizer is put on. After July we put 329 lbs per acre of 20/8/14. This is a base dressing on mineral soils; a top dressing of 25/16 of 160 lbs per acre is used for the earlier plantings.

## PLANTING:

We use a 5-row Accord Planter which plants on 6 ft. beds at 11 in. centres; the approximate rate is 25,000 plants per day. Once the machine has gone through there is quite a ridge which can be a problem; the ridge is then levelled using a lillistrum. Once levelled the spray department seals the crop on the ground using Venzar.

Some plants do not need any spray, e.g. *Scabius*, *Phlox*, *Papaver orientalis*, *Pulmonaria*, though some will take Enide. Betanole has been used as a high pressure spray in the cool of the evening especially on cultivars that cannot be sprayed with a pre-

emergent herbicide. Later in the year a hoe has to be used, but with labour being so expensive we have to rely on herbicides more and more.

#### PROPAGATION UNIT:

This is separate from the open ground splitting. It has its own staff of nine as previously mentioned. This is where all the cuttings are taken and grown: tip cuttings using mist, heel cuttings using traditional cold frames, and root cuttings.

Cold frames are mostly covered by Dutch lights now but some are modified summer frames covered with polythene stapled onto wooden battens. Lavender, *Geranium* × *riverslexianum* 'Russell Prichard', santolinas, rosemarys and *Sedum* 'Autumn Joy' and *S.* 'Ruby Glow' are put in cold frames. Cuttings are put into the soil in these frames which is a sandy mix with extra peat and grit worked in. There are 1,000 cuttings per Dutch light so each frame could hold 30,000 cuttings.

The propagation year would start in September, with root cuttings of *Papaver* which are ready for planting in March.

In October we would start certain grey-foliaged cultivars e.g. *Artemisia*, *Lavandula*, *Rosmarinus*, *Santolina chamaecyparissus*, and *Salvia officinalis*.

In November we are preparing heeled cuttings of *Geranium* × *riversleaianum* 'Russell Prichard', *Potentilla* cultivars such as 'Gibsons Scarlet', 'Yellow Queen', and 'Flamenco'. These are overwintered and planted out in March/April. The main batch of root cuttings now start and carry on for the next 2 months. These are *Phlox paniculata* cultivars such as 'Eva Cullum', 'Franz Schubert', and 'White Admiral'. *Anchusa* and *Verbascum* come next. These can either be put into the ground in bunches held together by an elastic band (which is not so tight as to cause root damage), or singly in rows.

In January root cuttings are continued which include: *Anemone* × *hybrida*, with root pieces scattered, as well as *Echinacea purpurea* 'R. Bloom', *Limonium latifolium* 'Violetta', *Geranium sanguineum*, and *Symphytum* 'Rubrum'.

In February: The bergenias are propagated from 2 and 3-year old plants; the stem sections are sliced into 1 in. lengths, which are pressed into compost and when they shoot they are further sliced and then potted. *Sedum* 'Autumn Joy' and *Sedum* 'Ruby Glow', and *Veronica* can all be put under polythene covers. These are all made as heel cuttings.

In March *Achillea* 'Moonshine' is propagated—also *Achillea filipendulina* 'Goldplate', and *Achillea filipendulina* 'Coronation Gold'. Delphiniums are now pushing up quickly. We only do *Delphinium* × *belladonna* cultivars from heel cuttings. *Aster novae-angliae* 'Alma Potschke' cuttings are best taken as heel cuttings as



they are quite difficult to split. *Salvia* × *superba* cultivars are coming now—'Lye End', 'Indigo', and 'East Freisland'.

By April *Chrysanthemum* × *maximum* 'Snowcap' can be split in the field. We also take cuttings now to provide potting plants and plants for next year's field propagation. Campanulas have soft growth. *C. lactiflora* 'Pouffe', *C. lactiflora* 'White Pouffe' and *scabius* can all be done now. Tip cuttings are also started in April, *Gypsophila paniculata* 'Compacta Plena', and *Monarda didyma* 'Cambridge Scarlet' can be started by division or tip cuttings. Large numbers of dwarf asters are propagated in April also to increase our autumn-flowering garden centre trade.

In May: *Euphorbia griffithii* 'Fireglow' will come into its own. This is a difficult plant to propagate, since until you have overwintered the cuttings you cannot guarantee that the plants will ever establish and grow away. Lamiums go into the frame in May and are very quick to start, Lythrums are started from scratch each year using tip cuttings in the frame or in mist. For *Sedum* 'Autumn Joy', and *Sedum* 'Ruby Glow', the plants from the cold frames will go as open ground and the tips will go potted as container plants in June and July.

In June tip cuttings are at the peak period. Those we use are *Veronica spicata* cultivars, *Artemesia* 'Powis Castle', and *Phygelius capensis* 'Yellow Trumpet'. The frame yard is now basically cleared; open ground planting has now finished and sterilization of the frames takes place to be ready for the new season.

July and August are for seed propagation and staff starts pricking out or lining out seedlings. Cutting propagation of one or two plants must be done at this time, e.g. *Papaver* 'Fireball' from root cuttings. This is so rapid that cuttings can be taken in July and plants sold in 9 cm pots in September. *Heuchera* cultivars and *Vinca* propagation can also be done in August.

#### SEED PROPAGATION:

A considerable number of plants are grown from seed, some of which we collect ourselves and the remainder we buy through seed catalogues. We try to sow at the correct times rather than worrying about dormancy problems. The season starts with collecting *Helleborus* seeds which are sown in July in the open ground. Germination takes place about 6 months later. The seedling could then be planted the following June or July with plants for sale in September onwards.

Our programme for seed includes both open ground and box sowings.

Phase 1: December or January with box sowing. This provides work at this time and is useful for seeds that require good frost treatments, e.g. gentians and primulas. Seed germination takes place in March and April.

Phase 2 comes next and is more specific. *Alchemilla mollis* seed requires as much frost treatment as possible, but it is still difficult to germinate. *Aruncus sylvester*, *Heuchera* × *brizoides* Bressingham hybrids, *Caltha paulstris* 'Alba', *Geranium armenum*, *Germanium sanguineum*, *Chelone obliqua*, *Polygonum milletii*, *Rodgersia*, *Rudbeckia fulgida* 'Goldsturm' and *Knautia macedonica* [syn. *Scabiosa rumelica*] seed are sown at this time.

Phase 3 usually comes at the end of March/early April. This is a major part of the seed propagation program. *Campanula*, *Delphinium*, *Doronicum*, *Lobellia*, *Malva alcea* var. *fastigata*, *Nepeta nervosa*, *Phygelius capensis* and *Meconopsis betonicifolia* [syn. *M. baileyii*] seeds can be sown now. They all seem to require humidity and warmth to germinate effectively.

Phase 4 takes place at the end of May/June. Seeds sown are of cultivars that react very quickly, such as *Gaillardia*, *Digitalis*, as well as some second batches of *Heuchera*.

For open ground sowings: We use autumn sterilized soil with Basamid. The temperature of the soil is high enough by the end of March/early April for sowings to take place. We sow in 3 groups:

1) Mature plants, less than one year from seed: *Aquilegia*, *Euphorbia*, *Salvia*, *Eryngium*, *Oenothera missourensis*. These plants are saleable by the following September.

2) One year from seed: *Kniphofia*, *Thalictrum*, *Ancanthus*. The seedlings are planted out after 1 year.

3) Two-years from seed: Germination is erratic or the plant seedlings are not big enough to handle before two years from planting: *Eryngium bourgatii*, *Paeonia moksewitchii*, *Agapanthus* hybrid seedlings, *Ophiopogon planiscapus* 'Arabicus', *Dictamnus albus* seeds are sown in drills, 1½ in. deep and scattered in the rows by hand. Beds are on sterilized land, but they still need hoeing. Plants are destined for container sales or open ground planting.

The container area of the herbaceous plant department is about 5 acres having five permanent staff which handles 950,000 plants. Of these 750,000 are in 9 cm pots, 100,000 in 2 litre pots, plus a new range this year of 1 litre pots; 100,000 of these good quality perennials are for garden centre sales, specifically.