

Pollinator friendly planting code - professional planting recommendations

Experts agree that inadequate nutrition is a major cause of pollinator declines. We want pollinators to be there when we need them, but our landscape doesn't provide the abundance and diversity of flowering plants that they need to survive throughout their life cycle. To have a healthy balanced diet, bees need to be able to feed on pollen and nectar from a range of different flowers from early spring to autumn.

It is important to prioritise increasing native plants (trees, shrubs, wildflowers) across the landscape to provide food for pollinators. Many of the actions in this guide are designed to do that.

Good native hedgerow species for pollinators:

Hazel (Feb-Apr)
Willow (Mar-May)
Blackthorn (Mar-May)
Hawthorn (Apr-Jun)
Broom (Apr-Jun)
Wild Cherry (Apr-May)
Bramble (May-Sept)
Wild Privet (May-Jul)
Crab apple (May-Jun)
Elder (May-Jun)
Whitebeam (May-Jun)
Rowan (May-Jun)
Wild Rose (Jun-Jul)
Honeysuckle (Jun-Oct)
Guelder Rose (Jun-Jul)
Raspberry (Jun-Aug)
Ivy (Sept-Nov)
Gorse (Jan-Dec)

These species are not recommended for hedgerows: Horse Chestnut, Beech, Laburnum, Lilac, Lime.
These species can be considered invasive and should not be planted: Fuchsia, Cherry Laurel, Rhododendron, Sycamore, Snowberry.

Deliberately planting horticultural or ornamental plants

Important: In towns and villages non-native horticultural or ornamental plants can be an important additional food source for pollinators. It is important to choose species that are good sources of nectar and pollen. However, you should **not** plant these in natural or semi-natural habitats. They should also not be planted in farmland (outside of farm gardens).

- Perennial plants are generally better sources of pollen and nectar than annuals. They are also cost effective as they grow and flourish over the following years. In contrast to seasonally replaced annual bedding, perennial plants can look less attractive to the public when they have finished flowering. This can be minimised by carefully selecting perennials

and mixing them with ornamental grasses. See advice on perennial planting, including pollinator friendly planting suggestions on page 11.

- Traditional annual bedding plants like Geraniums, Begonias, Busy Lizzy, Petunias, Polyanthus or *Salvia splendens* have virtually no pollen and nectar and are of little value to pollinators. If you are choosing bedding plants, do not select F1 and F2 hybrids. If you are using annuals you should try to select scented, single-flowered varieties. The block planting of these can be an excellent source of food for pollinators.
- We have provided lists of pollinator friendly trees, shrubs, climbers, perennials, annuals and bulbs. Please note that these are not exhaustive lists. There are lots of other species that are also pollinator friendly and could be incorporated where appropriate. The best guide is to observe what the bees themselves are feeding on in parks/gardens and to increase the amount of these plants.

STREET TREES

Roadside margins can be difficult locations in which to establish trees. Those suggested are pollinator friendly, resistant to pruning and should not cause any structural damage or create health and safety issues.

Species	Flowering
Juneberry Tree <i>Amelanchier x grandiflora</i> 'Robin Hill'	Small white flower April. Good autumn colour
Upright Hawthorn <i>Crataegus monogyna</i> 'Stricta'	White flowers May
Pillar crab <i>Malus tschonoskii</i>	Scented white flowers May. <u>Can set fruit.</u>
Callery pear <i>Pyrus calleryana</i> 'Chanticleer'	White flowers April-May. <u>Can set fruit.</u>
Rowan <i>Sorbus acuparia</i> varieties	White flowers May-June
Lime <i>Tilia cordata</i> 'Greenspire'; <i>Tilia x europaea</i> 'Euchlora'	Pale yellow flowers June-July

Lime (*Tilia*) species have fragrant flowers and produce a lot of nectar, however care is needed in the selection of cultivars as many can grow to large tree size proportions that will exceed allotted roadside space. Some are also very attractive to aphids and can lead to honeydew drip onto cars below (e.g., *Tilia x europaea*, *T. platyphyllos*). Those suggested above are smaller and don't attract aphids, therefore producing no dripping.

OPEN SPACE TREES

While the range of trees favourable to pollinators capable of growing on open spaces is very large, actual selection is very much dependent on the situation thus **expert advice should be sought**.

Species	Flowering
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Horse Chestnut <i>Aesculus hippocastanum</i>	White flowers May-June
Juneberry <i>Amelanchier</i> species (not <i>A. lamarckii</i> which may be invasive)	White flowers April
Indian bean tree <i>Catalpa bignonioides</i>	White flowers May - July
Hawthorn <i>Crataegus</i> species	White flowers May – June
Apple <i>Malus</i> species/cultivars	White, pink, red flowers May
Foxglove tree <i>Paulownia tomentosa</i>	Lavender blue flowers May
Wild Cherry <i>Prunus avium</i>	White flowers April
Bird Cherry <i>Prunus padus</i>	White flowers April
Japanese flowering cherry <i>Prunus serrulata</i> ‘Tai Haku’ Japanese flowering cherries are available in a wide range of cultivars, those with single flowers most pollinator attractive, however the attractiveness of specific cultivars is unclear and not well documented	Large white flowers April
Pear <i>Pyrus</i> species and cultivars	White flowers May
Rowan <i>Sorbus</i> species/cultivars	White flowers May-June
Willow Salix are fast growing and are excellent trees for pollinating insects producing large quantities of nectar and pollen. However choice of an appropriate species/cultivar for the right situation requires careful consideration. Priority should always be given to native species, but recommended non-native species include: <i>Salix aegyptiaca</i> (early spring flowering) <i>Salix alba</i> (spring flowering) Salix alba ‘Liempde’ Salix alba var. vitellina	Flowers in catkins in spring
Lime Tilia can grow to very large trees, so careful selection is required. Although the range and diversity of Tilia is very large, only a small selection is recommended including: Tilia Americana ‘Redmond’ Tilia cordata Tilia x europea Tilia platyphyllos Tilia tomentosa	White flowers in summer

BULBS, ANNUALS, BIENNIALS, PERENNIALS, CLIMBERS & SHRUBS

This list of **ornamental** plants is taken directly from the RHS Perfect for Pollinators list <https://www.rhs.org.uk>. Potentially invasive species have not been included. Highlighted species are those recognised to be particularly good for pollinators in Ireland, based on expert opinion (not exhaustive).

AUTUMN

BULBS

- Colchicum species** (Autumn crocus)
- Crocus species** (Crocus, autumn-flowering)

PERENNIALS

- Aconitum carmichaelii (Carmichael's monk's hood)
- Actaea simplex (Simple-stemmed bugbane)
- Anemone × hybrida (Japanese anemone)
- Anemone hupehensis (Chinese anemone)
- Aster species and hybrids** (Michaelmas daisy)
- Campanula poscharskyana** (Trailing bellflower)
- Ceratostigma plumbaginoides (Hardy blue-flowered leadwort)
- Chrysanthemum species & hybrids (Chrysanthemum)
- Dahlia species & hybrids** (Dahlia)
- Helianthus × laetiflorus (Perennial sunflower)
- Leucanthemella serotina (Autumn ox-eye)
- Salvia species** (Sage -autumn-flowering)

CLIMBERS

- Clematis heracleifolia (Tube clematis)
- Hedera colchica (Persian ivy)

SHRUBS

- Arbutus unedo (Strawberry tree)
- Elaeagnus × ebbingei (Ebbinge's silverberry)
- Elaeagnus pungens (Silverthorn)
- Fatsia japonica (Japanese aralia)

WINTER

BULBS

- Crocus species** (Crocus, winter-flowering)
- Eranthis hyemalis (Winter aconite)
- Galanthus nivalis** (Common snowdrop)

PERENNIALS

Helleborus species and hybrids (Hellebore, winter-flowering)

CLIMBERS

Clematis cirrhosa (Spanish traveller's joy)

SHRUBS

× *Fatsyhedera lizei* (Tree ivy)
Lonicera × *purpusii* (Purpus honeysuckle)
Mahonia species (Oregon grape)
Salix aegyptiaca (Musk willow)
Sarcococca confusa (Sweet box)
Sarcococca hookeriana (Sweet box)
Viburnum tinus (Laurustinus)

SPRING

BULBS

Crocus species (Crocus, spring-flowering)
Muscari armeniacum (Armenian grape hyacinth)
Ornithogalum umbellatum (Common star of Bethlehem)

BIENNIALS

Erysimum species (Wallflower)
Lunaria annua (Honesty)

PERENNIALS

Arabis alpina subsp. *caucasica* (Alpine rock cress)
Armeria juniperifolia (Juniper-leaved thrift)
Aubrieta species (Aubretia)
Aurinia saxatilis (Gold dust)
Bergenia species (Elephant ear)
Doronicum × *excelsum* (Leopard's bane)
Erysimum 'Bredon' (Wallflower 'Bredon')
Euphorbia amygdaloides (Wood spurge)
Euphorbia characias (Mediterranean spurge)
Euphorbia cyparissias (Cypress spurge)
Euphorbia epithymoides (Cushion spurge)
Euphorbia nicaeensis (Nice spurge)
Helleborus species & hybrids (Hellebore, spring-flowering)
Iberis saxatilis (Alpine candytuft)
Iberis sempervirens (Perennial candytuft)
Lamium maculatum (Spotted dead nettle)
Pulmonaria species (Lungwort)

SHRUBS

Berberis darwinii (Darwin's barberry)
Chaenomeles species (Japanese quince)

Cornus mas (Cornelian cherry)
 Cotoneaster conspicuus (Tibetan cotoneaster)
 Enkianthus campanulatus (Redvein enkianthus)
 Erica × darleyensis (Darley dale heath)
 Erica carnea (Alpine heath)
 Hebe species (Hebe)
 Mahonia species (Oregon grape (spring-flowering))
 Pieris formosa (Lily-of-the-valley bush)
 Pieris japonica (Lily-of-the-valley bush)
 Prunus incisa 'Kojono-mai' (Cherry 'kojo-no-mai')
 Prunus tenella (Dwarf russian almond)
 Ribes nigrum (Blackcurrant)
 Ribes rubrum (Redcurrant)
 Salix hastata 'Wehrhahnii' (Halberd willow 'wehrhahnii')
 Salix lanata (Woolly willow (male form only))
 Skimmia japonica (Skimmia)
 Stachyurus chinensis (Stachyurus)
 Stachyurus praecox (Stachyurus)
 Vaccinium corymbosum (Blueberry)

SUMMER

BULBS

Allium species ornamental and edibles (when allowed to flower) (Allium)

ANNUALS

Ageratum houstonianum (Flossflower)
 Amberboa moschata (Sweet sultan)
 Anchusa azurea (Large blue alkanet)
 Anchusa capensis (Cape alkanet)
 Antirrhinum majus (Snapdragon)
 Argemone platyceras (Crested poppy)
 Borago officinalis (Borage)
 Calendula officinalis (Common marigold)
 Callistephus chinensis (China aster)
 Centaurea cyanus (Cornflower)
 Centratherum punctatum (Manaos beauty)
 Cerinthe major 'Purpurascens' (Honeywort 'purpurascens')
 Clarkia unguiculata (Butterfly flower)
 Cleome hassleriana (Spider flower)
 Consolida ajacis (Giant larkspur)
 Cosmos bipinnatus (Cosmea)
 Cosmos sulphureus (Yellow cosmos)
 Cucurbita pepo (Courgette)
 Cuphea ignea (Cigar flower)
 Echium vulgare (Viper's bugloss)
 Eschscholzia californica (California poppy)

Gilia capitata (Blue thimble flower)
Glebionis segetum (Corn marigold)
Gypsophila elegans (Annual baby's breath)
Helianthus annuus (Common sunflower (avoid pollen-free cultivars))
Helianthus debilis (Cucumberleaf sunflower)
Heliotropium arborescens (Common heliotrope)
Iberis amara (Wild candytuft)
Lavatera trimestris (Annual lavatera)
Limnanthes douglasii (Poached egg flower)
Linaria maroccana (Annual toadflax)
Lobularia maritima (Sweet alyssum)
Malope trifida (Large-flowered mallow wort)
Nemophila menziesii (Baby blue eyes)
Nicotiana alata (Flowering tobacco)
Nicotiana langsdorffii (Langsdorff's tobacco)
Nigella damascena (Love-in-a-mist)
Nigella hispanica (Spanish fennel flower)
Papaver rhoeas (Poppy)
Phacelia campanularia (Californian bluebell)
Phacelia tanacetifolia (Fiddleneck)
Phaseolus coccineus (Scarlet runner bean)
Reseda odorata (Garden mignonette)
Ridolfia segetum (False fennel)
Sanvitalia procumbens (Creeping zinnia)
Scabiosa atropurpurea (Sweet scabious)
Tagetes patula (French marigold)
Tithonia rotundifolia (Mexican sunflower)
Trachymene coerulea (Blue lace flower)
Tropaeolum majus (Garden nasturtium)
Verbena × hybrida (Garden verbena)
Verbena rigida slender (Vervain)
Vicia faba (Broad bean)
Zinnia elegans (Youth and old age)

BIENNIALS

Alcea rosea (Hollyhock)
Angelica archangelica (Angelica)
Angelica gigas (Purple angelica)
Campanula medium (Canterbury bells)
Dianthus barbatus (Sweet william)
Digitalis species (Foxglove)
Eryngium giganteum (Miss willmott's ghost)
Lychnis coronaria (Rose campion)
Matthiola incana (Hoary stock)
Myosotis species (Forget-me-not)
Oenothera species (Evening primrose)
Onopordum acanthium (Cotton thistle)
Verbascum species (Mullein)

PERENNIALS

Achillea species (Yarrow)
Actaea japonica (Baneberry)
Agastache species (Giant hyssop)
Amsonia tabernaemontana (Eastern bluestar)
Anthemis tinctoria (Dyer's chamomile)
Aquilegia species (Columbine)
Aruncus dioicus (male form only) (Goat's beard)
Asparagus officinalis (Common asparagus)
Astrantia major (Greater masterwort)
Buphthalmum salicifolium (Yellow ox-eye)
Calamintha nepeta (Lesser calamint)
Campanula carpatica (Tussock bellflower)
Campanula glomerata (Clustered bellflower)
Campanula lactiflora (Milky bellflower)
Campanula latifolia (Giant bellflower)
Campanula persicifolia (Peach-leaved bellflower)
Catananche caerulea (Blue cupidone)
Centaurea atropurpurea (Purple knapweed)
Centaurea dealbata (Mealy centaury)
Centaurea macrocephala (Giant knapweed)
Centaurea montana (Perennial cornflower)
Cirsium rivulare 'Atropurpureum' (Purple plume thistle)
Coreopsis species (Tickseed)
Crambe cordifolia (Greater sea kale)
Cynara cardunculus including *Scolymus* Group (Globe artichoke and cardoon)
Cynoglossum amabile (Chinese forget-me-knot)
Dahlia species (Dahlia)
Delosperma floribundum (Ice plant)
Delphinium elatum (Candle larkspur)
Dictamnus albus (Dittany)
Echinacea purpurea (Purple coneflower)
Echinops species (Globe thistle)
Erigeron species (Fleabane)
Eriophyllum lanatum (Golden yarrow)
Eryngium × *tripartitum* (Eryngo)
Eryngium alpinum (Alpine eryngo)
Eryngium planum (Blue eryngo)
Erysimum × *allionii* (Siberian wallflower)
Eupatorium maculatum (Joe pye weed)
Euphorbia cornigera (Horned spurge)
Euphorbia sarawschanica (Zeravshan spurge)
Ferula communis (Giant fennel)
Foeniculum vulgare (Fennel)
Fragaria × *ananassa* (Garden strawberry)
Gaillardia × *grandiflora* (Blanket flower)

Gaura lindheimeri (White gaura)
Geranium species (Cranesbill (summer-flowering))
Geum species (Avens (summer-flowering))
Helenium species (Helen's flower)
Heliopsis helianthoides (Smooth ox-eye)
Hesperis matronalis (Dame's violet)
Inula species (Harvest daisy)
Knautia macedonica (Macedonian scabious)
Lathyrus latifolius (Broad-leaved everlasting pea)
Leucanthemum × superbum (Shasta daisy)
Liatris spicata (Button snakewort)
Limonium platyphyllum (Broad-leaved statice)
Linaria purpurea (Purple toadflax)
Lythrum virgatum (Wand loosestrife)
Malva moschata (Musk mallow)
Mentha spicata (Spearmint)
Monarda didyma (Bergamot)
Nepeta × faassenii (Garden catmint)
Origanum 'Rosenkuppel' (Marjoram 'rosenkuppel')
Paeonia species (Peony)
Papaver orientale (Oriental poppy)
Persicaria amplexicaulis (Red bistort)
Persicaria bistorta (Bistort)
Phlox paniculata (Perennial phlox)
Phuopsis stylosa (Caucasian crosswort)
Polemonium caeruleum (Jacob's ladder)
Potentilla species (Cinquefoil)
Rudbeckia species (Coneflower)
Salvia species (Sage)
Scabiosa caucasica (Garden scabious)
Scabiosa columbaria (Small scabious)
Sedum spectabile & hybrids (Ice plant)
Sedum telephium (Orpine)
Sidalcea malviflora (Checkerbloom)
Solidago species (Goldenrod)
Stachys byzantina (Lamb's ear)
Stachys macrantha (Big sage)
Stokesia laevis (Stokes' aster)
Tanacetum coccineum (Pyrethrum)
Tanacetum vulgare (Tansy)
Telekia speciosa (Yellow ox-eye)
Teucrium chamaedrys (Wall germander)
Verbena bonariensis (Purple top)
Veronica longifolia (Garden speedwell)
Veronicastrum virginicum (Culver's root)

CLIMBERS

Campsis radicans (Trumpet honeysuckle)

Convolvulus tricolor (Dwarf morning glory)
Hydrangea anomala subsp. *petiolaris* (Climbing hydrangea)
Jasminum officinale (Common jasmine)
Parthenocissus tricuspidata (Boston ivy)
Pileostegia viburnoides (Climbing hydrangea)

SHRUBS

Aesculus parviflora (Bottlebrush buckeye)
Brachyglottis (Dunedin Group) 'Sunshine' (*Brachyglottis* 'sunshine')
Brachyglottis monroi (Monro's ragwort)
Buddleja globosa (Orange ball tree)
Bupleurum fruticosum (Shrubby hare's ear)
Callicarpa bodinieri var. *giraldii* (Beautyberry)
Caryopteris × *clandonensis* (*Caryopteris*)
Cornus alba (Red-barked dogwood)
Elaeagnus angustifolia (Oleaster)
Erica vagans (Cornish heath)
Erysimum 'Bowles's Mauve' (Wallflower 'bowles's mauve')
Escallonia species (*Escallonia*)
Hebe species (*Hebe*)
Hydrangea paniculata (Paniculate hydrangea (cultivars with many fertile flowers e.g. 'kyushu', 'big ben', 'floribunda', 'brussels lace'))
Hyssopus officinalis (Hyssop)
Kalmia latifolia (Mountain laurel)
Laurus nobilis (Bay tree)
Lavandula × *intermedia* (Lavandin)
Lavandula angustifolia (English lavender)
Lavandula stoechas (French lavender)
Lavatera olbia (Tree lavatera)
Ligustrum ovalifolium (Garden privet)
Ligustrum sinense (Chinese privet)
Olearia species (Daisy bush)
Perovskia atriplicifolia (Russian sage)
Phlomis species (Sage)
Photinia davidiana (*Stranvaesia*)
Prostanthera cuneata (Alpine mint bush)
Ptelea trifoliata (Hop tree)
Pyracantha species (Firethorn)
Rosmarinus officinalis (Rosemary)
Spiraea japonica (Japanese spiraea)
Tamarix ramosissima (Tamarisk)
Thymus species (Thyme)
Viburnum lantana (Common wayfaring tree)
Weigela florida (*Weigelia*)
Zauschneria californica (Californian fuchsia)

Perennial planting schemes

Pollinator friendly perennial plants are excellent sources of pollen and nectar. They are much more attractive to bees when planted in blocks rather than as single plants. Having a pollinator friendly perennial bed is an excellent way to provide food for pollinators across their lifecycle.

Perennials can be used to great effect in traffic islands and public spaces, providing a strong visual impact and giving a good display of flowers over a long period. Pollinator friendly perennial planting should be designed to provide a food source from spring through to autumn. In addition they are:

- Low maintenance
- Easy to establish
- Have strong visual impact
- More cost effective than bedding schemes over the long term
- Less maintenance than lawn mowing
- Provide a natural style of planting
- Provide habitat and nesting materials for birds and insects

Costing: Pollinator friendly perennial planting versus annual bedding

Planting regime	Approximate costs per m ² (2016)	Typical replacement
Pollinator friendly perennials	€10-13 (9 x 9cm pots)	Life span of 10-12 years if well planted and well maintained. Small amount of annual replacement may be required depending on the site
	€17-19 (6 x 2L pots)	
Annual bedding	€10-29	Twice per year

Based on prices from a large Irish perennial plant nursery (Young Nurseries). Typical annual bedding costs were provided by a Council in ROI.

Key Points:

- ✓ Soil preparation before planting is essential
- ✓ Dense planting will reduce weeding
- ✓ Regular maintenance is important
- ✓ Use only good quality plants from a reliable source

Suggested plant lists:

These are examples of planting selections that have been used to create pollinator friendly perennial beds in Ireland. These mixes create an attractive and colourful display for the public while also providing food for pollinators. Grass is included to provide colour and structure in autumn/winter.

Option A

Little Experience with Perennials		flowers :
Aster 'Asran' / 'Stardust'	Pollinator	Aug - Sept
Crocsmia 'Babylon'	Pollinator	Aug - Sept
Geranium 'Cambridge'	Pollinator	May - Aug

Hemerocallis 'Stella d'or'	Pollinator	May - Aug
Nepeta 'Walkers Low'	Pollinator	May - July
Oregano 'Golden'	Pollinator	June - July
Rudbeckia 'Goldstrum'	Pollinator	July - Aug
Sedum 'Autumn Joy'	Pollinator	July - Aug
Stachys 'Byzantina'	Pollinator	July - Aug
Stipa arundinacea	Grass	

Plants from List A are easy to grow and maintain, ideal to start off with.

Option B

Some Experience with Perennials

Flowers :

Achillea 'Moonshine'	Pollinator	May - Aug
Allium schoenoprasum	Pollinator	June - July
Anemone 'Splendens'	Pollinator	July - Aug
Aster 'Little Carlow'	Pollinator	Sept - Oct
Calamagrostis 'Karl Foerster'	Grass	
Calamintha	Pollinator	Aug - Sept
Fennel	Pollinator	July - Sept
Kniphofia	Pollinator	July - Sept
Lamium 'Pink Chablis'	Pollinator	April - Aug
Lavender	Pollinator	May - July
Leucanthemum	Pollinator	July - Aug
Monarda Jacob Cline	Pollinator	July - Aug
Osteospermum ecklonis	Pollinator	May - Aug
Salvia nemerosa	Pollinator	May - July
Stachys 'Hummelo'	Pollinator	July - Aug
Stipa 'Ponytails'	Grass	
Symphytum 'Wisley Blue'	Pollinator	April - May
Thyme	Pollinator	June - July

Plants from List B can be added to schemes to provide more interest in colour and form.

Perennial planting schemes can be underplanted with spring bulbs to provide early food for bees

Crocus	Pollinator
Snowdrop	Pollinator
Muscari	Pollinator
Bluebells - native	Pollinator

Note: Spanish Bluebells are invasive. Only native, local provenance Bluebells should be planted.

Maintenance:

Good ground preparation is essential to minimise maintenance in the future.

- ✓ Removal of all root weeds before planting such as scutch grass, bindweed etc. will reduce weeding later on. Sometimes it is best to leave the site fallow for a season to sort out any issues.
- ✓ The soil must be well drained and not compacted, and have good nutritional content. Organic material can be added. There is usually no need to add fertiliser.
- ✓ Plants ideally should contain a slow release fertiliser in the pot and should be watered well before planting.
- ✓ In the first few months after planting beds will have to be weeded by hand as hoeing can damage spreading plants. This should be done regularly, maybe three or four times in year one depending on the weed population. When the perennials have established and provided dense cover, the frequency of weeding can be reduced.
- ✓ In year two and onwards, weed the beds at the beginning of and end of the growing season, and spot check for the odd weed in between.
- ✓ Watering may have to be taken into consideration during dry spells.
- ✓ Leave dead stems on plants for the winter as they provide protection for the plants, offer food and habitat and nesting materials for wildlife, prevent weed seeds from germinating and increase the organic matter.
- ✓ The dead foliage can be removed in spring by mass pruning to approx. 10cm height when there is new growth appearing. Some plants like Grasses & Thymes will look good without pruning back.
- ✓ Organic matter like compost can be added to keep the soil in good condition.

Planting time:

March-April is the best time for planting as the plants will have plenty time to root in before summer. If planted in June then weeds will have already established and they will be easy to remove, but the plants have less time to root in and provide ground coverage.

Life span of perennial planting:

The life span of a well planted and well maintained perennial scheme is 10 to 12 years, maybe longer, which is about the same as a shrub bed. Small amount of replacements may be required depending on the site but in general the plants are trouble free.

Thanks to Young Nurseries who voluntarily provided suggested perennial plant lists and example costings.

Best Practice in the Use of Pesticides

In addition to the honeybee who lives in hives, we also have 20 different types of bumblebees and 77 different types of solitary bees in Ireland. Bumblebees and solitary bees live entirely in the wild. We need healthy populations of all these bees to carry out pollination if we want to have wildflowers in the landscape, be able to grow our own fruits and vegetables, or buy affordable, locally grown apples or strawberries in our shops. Bees and other pollinators can only survive in a landscape that provides them with food, shelter and safety throughout the year. Already, one third of our 98 bee species are threatened with extinction from Ireland.

Insecticides pose the greatest direct hazard to insect pollinators. However, herbicides use is having a much greater negative impact on pollinators because it is so widely used.

Herbicides, Fungicides and Plant Growth Regulators typically have little or no toxicity to pollinators, but many of the plants we spray as weeds are vital sources of food for pollinators, especially in early spring. Pollinators need a range of flowers to feed on from spring through to autumn. The overuse of these chemicals is making it very difficult for them to find enough food to survive in our landscape.

Pesticides should be used sparingly and only when absolutely necessary, such as in the treatment of invasive species like Japanese Knotweed

Do's

- Check the label and select pesticides that are less harmful to pollinators
- Always read, understand and follow the product label instructions fully
- Treat only the target area
- Spot treat rather than use blanket sprays
- Follow the buffer zone instructions on the product label
- Leave areas of pollinator-friendly habitat free from all pesticides. These include areas of clover or wildflowers, the base of hedgerows, and any natural areas.
- Minimize spray drift to non-target areas by:
 - Using equipment that reduces drift
 - Checking the weather forecast before application and be mindful of changing conditions.
 - Ensure that you spray when the wind is blowing away from beehives and pollinator-friendly habitat.

Don'ts

- Do not apply pesticides to bees or other pollinating insects
- Do not spray flower-rich areas (including weeds) when flowers are in bloom and providing food for bees. Plants that we might consider weeds like dandelions, vetches, clovers, dead-nettles and knapweed are important food sources as they provide high quality pollen and nectar for bees.
- Do not apply pesticides to areas that have been identified as important nesting areas for wild pollinators
- Do not apply pesticides to standing water.