

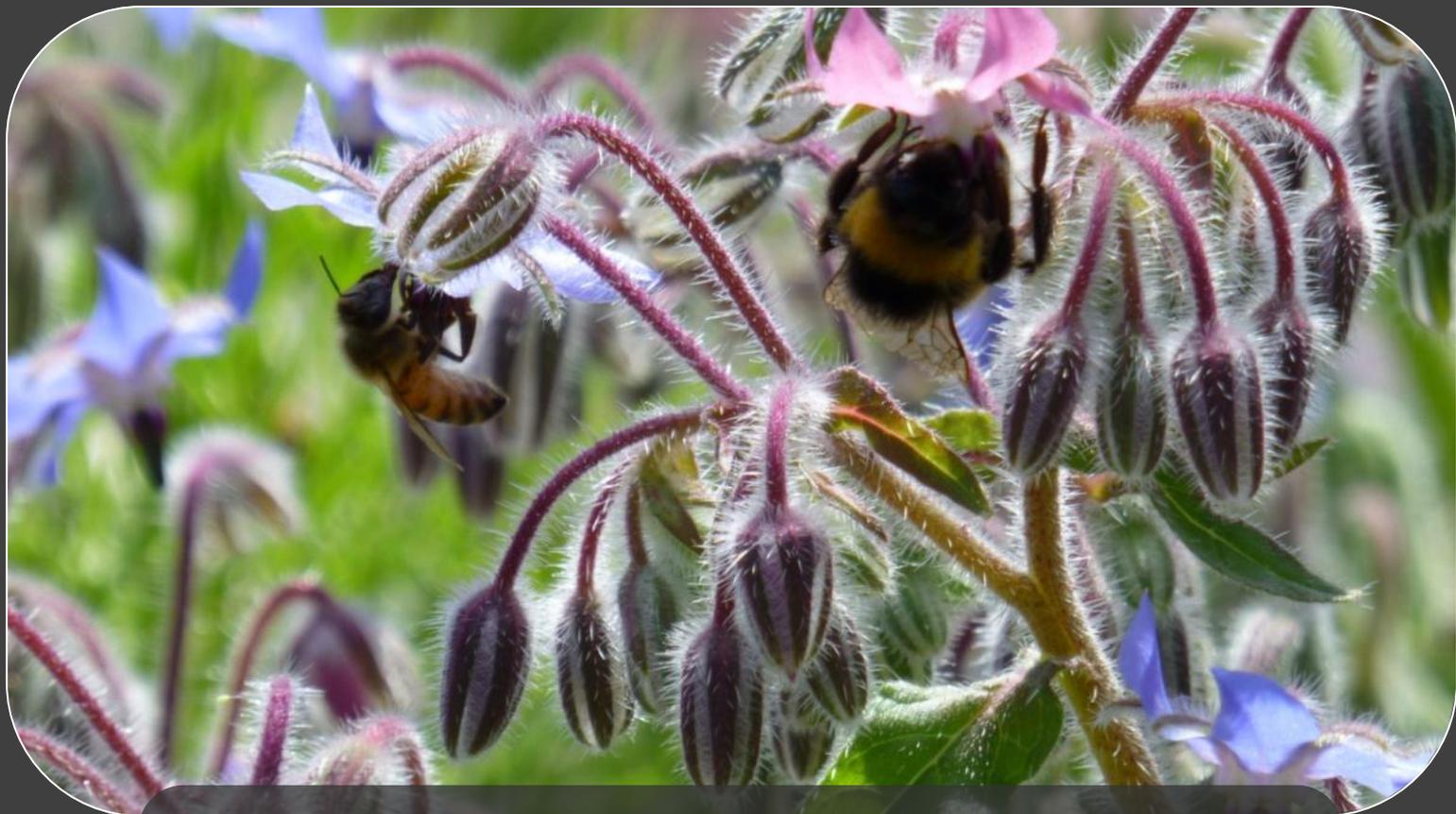


Technical Guide 2013



Urban & Environmental Meadows

CONTENTS	page
Introducing Euroflor	4
Seed cleaning, storage and packaging	5
Euroflor for sustainable landscapes	6
Euroflor, fewer carbon emissions	7
Biodiversity & nectar food sources	8
Urban meadows or indigenous species	9
Euroflor Urban Meadows or Wild Flowers.	10
Bedding, Wild Flowers or Urban Meadows,	11
The Ecology of Urban Meadows	12
Site selection	12
The solarisation technique	13
Euroflor installation & specifications	14
The Euroflor range	15
Choose a Euroflor mixture by height	16
Which Euroflor Mixture & Where ?	16
Native species in the mixes	17
Natural looking or colourful mixes	17
Dominant colours and flower succession	17
Your favourite Euroflor mixes :	18
Honey	18
Rainbow Annuals	19
Ground Cover	20
Drysec	21
Sarah Bouquet	22
Spring Flower	23
Reclamation	24
Colour Bouquets	25
Rainbow Perennials 	26
Classic 	27
Discovery Box 	28
Flowers Gone Wild 	29
Euroflor Seed Matting	30
Flower performance through the season	31
Trials in 2012 & 2013 for 2014	32
Troubleshooting	33
Euroflor UK 2012	34
Euroflor flower identification	39
Contact Information	43



POLLINATING INSECTS & BEE PRESERVATION

FLOWER DISPLAYS

BIODIVERSITY

EDUCATION



LANDSCAPING

EUROFLOR URBAN MEADOW FLOWER SEED MIXES

Seed is produced by Tezier-Clause and marketed by **Top Green** through its European distributors to the professional sector.

Exclusive UK distributor : **Rigby Taylor Ltd.**
Technical Support : **Grass Engineering.**

INTRODUCING EUROFLOR

“Creating urban meadows gives back to nature what has been taken away by our destruction of natural habitats. In addition to their aesthetic qualities they provide cover and food for many species of animals and insects.”



Children love flowers and they have an educational role in schools and colleges.

Euroflor Urban Meadow mixes contain both garden flower cultivars and wild flower species.



The originality of Euroflor's urban flower mixtures lies in their wonderful colour balance, species diversity and natural aspect. **Euroflor** is specifically designed for urban settings and offer a long flowering period from spring to autumn. Used extensively in Europe for the last twelve years, trials were undertaken throughout the UK in 2009 - 2010 on 18 distinct sites thereby enabling adjustments to be made to the Euroflor formulae, to adapt them to the British climate, soils and growing conditions.



EUROFLOR SEED CLEANING, STORAGE & PACKAGING



Europe's largest seed processing plant for flower and vegetable seed at Valence, in France, ensures that Euroflor seed conforms to European regulations on purity and germination. Each lot number is identifiable and traceable. The large storage capacity at optimum temperatures enables seed to be stored for 2 - 3 years thereby reducing harvest fluctuations and minimising price changes from one year to the next.



EUROFLOR FOR SUSTAINABLE LANDSCAPES

The landscape industry is now looking for solutions to reduce carbon emissions during maintenance operations and increase carbon sequestration through the use of grass cultivars and other plants.



Financial imperatives are forcing landscape managers to reduce maintenance operations, whilst looking for new solutions which continue to embellish urban areas in the way the public expect and appreciate.



Euroflor urban meadows form an essential part of a sustainable approach to flower displays combining the advantages of wild flowers with the exceptional displays of garden cultivars.

EUROFLOR URBAN MEADOWS FOR FEWER CARBON EMISSIONS & FINANCIAL SAVINGS

Easy direct sowing.

- no greenhouse heating
- no substrate requirements
- no plugs and plastic pots
- minimum irrigation
- no transport ...

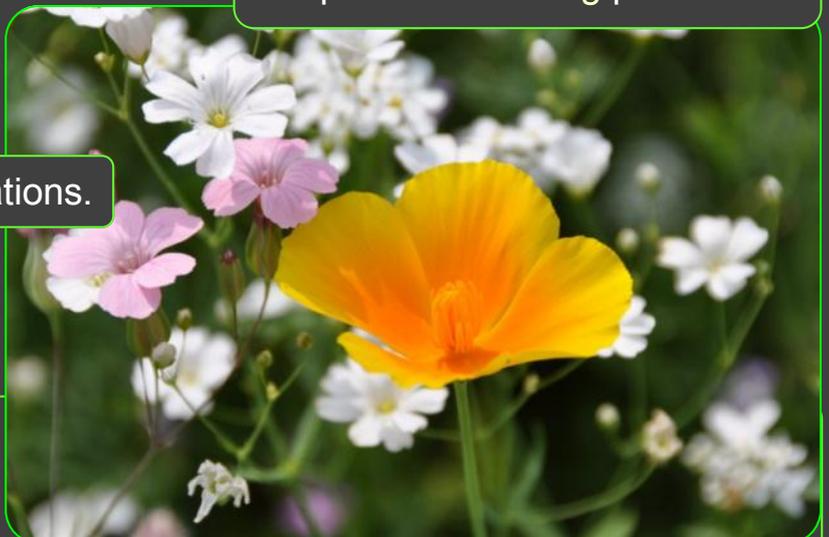


Little or no maintenance.



Less preparation time is needed compared to bedding plants.

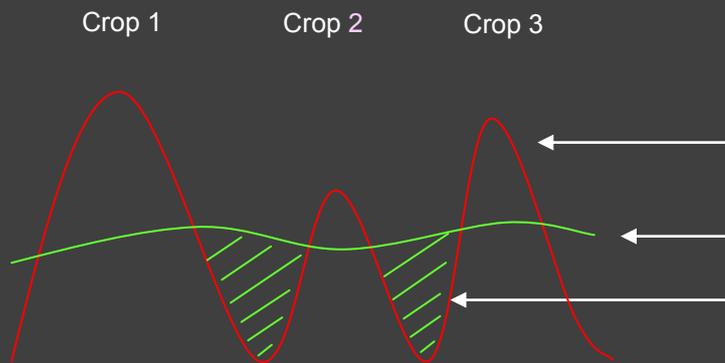
No fertiliser or chemical applications.



An independent study revealed that Euroflor Urban Meadows are 5 to 6 times more economic than bedding plants planted at 25 plugs /m² and they are 12% more economic than a good quality lawn which is cut 30 times a year.

BIODIVERSITY & NECTAR FOOD SOURCES

Euroflor sustains insect populations when other food sources are not available



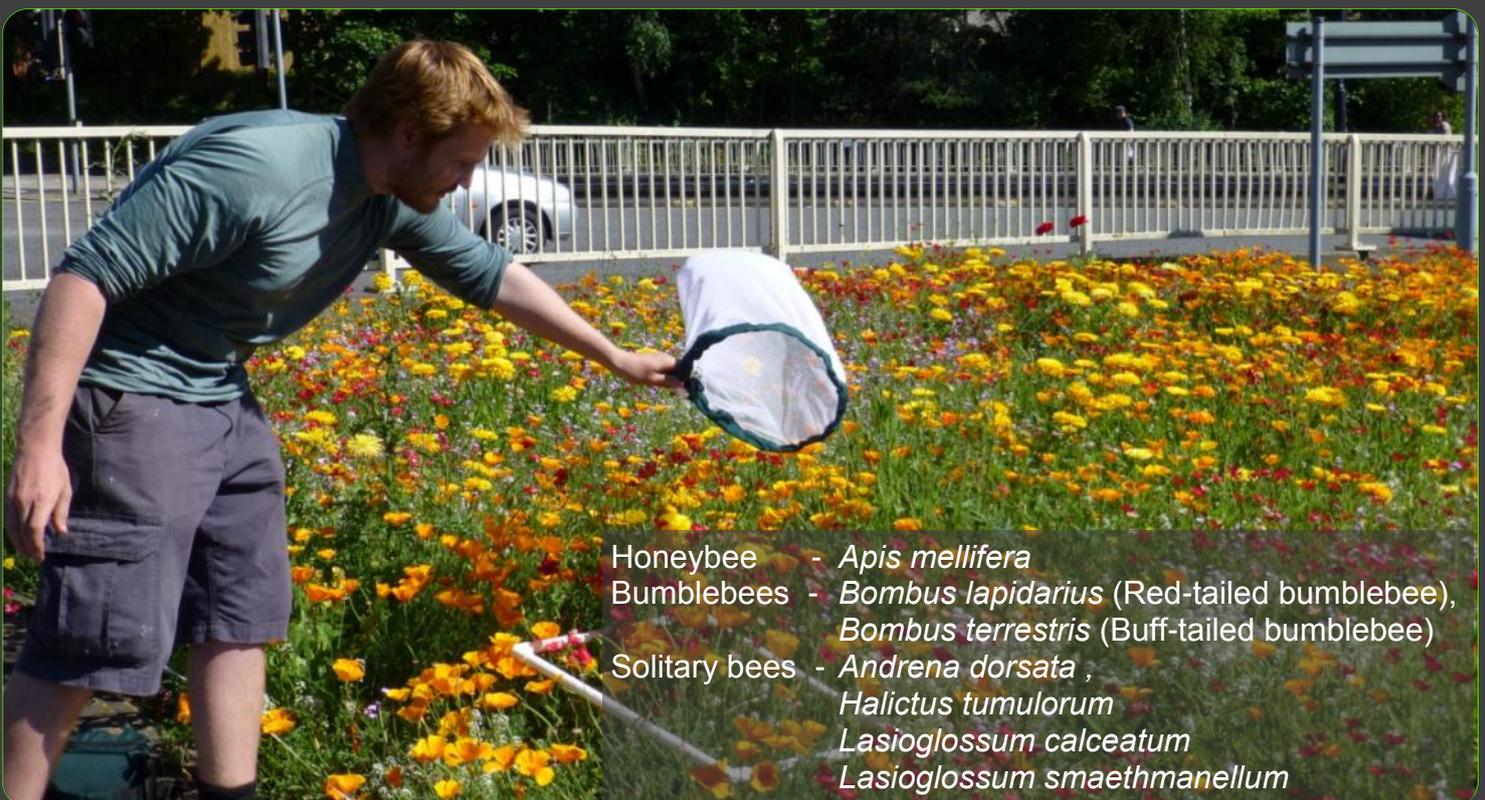
The need for insects here at peak flowering periods on successive fruit and vegetable crops throughout the growing season.

Euroflor flowers

Euroflor plays a tempering role by ensuring that pollinating insects have a nectar source between crops.



For habitat management, **Euroflor** helps maintain bumble bees, honey bees, butterflies, beetles, ladybirds and other insects in the environment by providing a regular and stable nectar source. The bees below were observed visiting **Euroflor** Rainbow mix in July and August 2012 in an ongoing research project led by Bristol University with Leeds, Reading and Edinburgh universities on pollinating insect biodiversity.



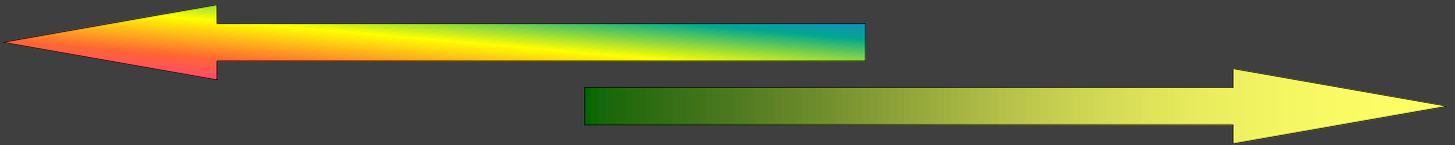
- Honeybee - *Apis mellifera*
- Bumblebees - *Bombus lapidarius* (Red-tailed bumblebee),
Bombus terrestris (Buff-tailed bumblebee)
- Solitary bees - *Andrena dorsata* ,
Halictus tumulorum
Lasioglossum calceatum
Lasioglossum smaethmanellum

URBAN MEADOWS OR INDIGENOUS SPECIES ? THE RIGHT CHOICE ON THE RIGHT SITE !!

EUROFLOR



WILD FLOWERS



Public Parks

Schools

Nature conservation sites

Roundabouts

Embankments

Rural roadsides

Shopping precincts

Country parks

Nature reserves

Replacement flower beds

Cemeteries

Riverside edges

Gardens

Industrial wasteland

National Parks

Tree surrounds

Sports field surrounds

EUROFLOR URBAN MEADOWS OR WILD FLOWERS

The difference between indigenous wild flowers and Euroflor annual urban meadows relates to their different flowering periods, flower performance and relevance to urban environments.

Hay Fields and their associated plant diversity are the result of consistent management over many years (sometimes hundreds) aimed at producing plant fodder for livestock over winter. They follow an annual cycle of spring growth, mowing and grazing, with manure being the only added fertiliser.

Whilst these species rich grasslands are part of our countryside heritage they are not adapted to urban environments.

HAY FIELD, PERENNIAL WILD FLOWERS									
March	April	May	June	July	August	Sept.	Oct.	Nov.	Dec.
			Spring flowers		Pasture with reduced flowering interest				
Grass growth			Field is mowed						
			Hay is dried & gathered		Grazing				



EUROFLOR ANNUAL URBAN MEADOWS									
March	April	May	June	July	August	Sept.	Oct.	Nov.	Dec.
			Late spring to late autumn flowering period						
			No cutting is possible, it would compromise the long flowering period						



BEDDING PLANTS, WILD FLOWERS or URBAN MEADOWS

Which are the most sustainable solutions for our towns & cities ?

	FLOWER BEDS	WILD FLOWERS	URBAN MEADOWS
Flower display	√ √ √ √ √	√	√ √ √ √ √
Relevant use of flower species in towns and cities	√ √ √ √ √	√	√ √ √ √ √
Natural aspect (fashionable alpine meadow look)	-	√ √ √ √	√ √ √ √ √
Flowering period	√ √ √ √	√	√ √ √ √ √
Flowering species diversity	√ √	√ √ √ √	√ √ √ √ √
Support of pollinating insect populations	√ √	√ √ √	√ √ √ √ √
Ecological biodiversity	√	√ √ √ √ √	√ √ √ √
Installation requirements	√ √	√	√ √ √ √ √
Maintenance requirements	√	√ √ √ √	√ √ √ √
Preparation time for installation	-	√ √ √ √	√ √ √ √ √
Suitable for urban situations	√ √ √ √ √	-	√ √ √ √ √
Fire hazard from drying hay	√ √ √ √ √	-	√ √ √
Irrigation requirements	√	√ √ √ √ √	√ √ √ √
Fertiliser & pesticide requirements	-	√ √ √ √ √	√ √ √ √ √
Installation costs	-	√ √ √	√ √ √ √ √
Maintenance costs	-	√ √ √ √	√ √ √ √
Overall environmental impact	-	√ √ √ √ √	√ √ √ √ √
Traceability of seed sources	-	√ √ √	√ √ √ √ √
TOTAL	33	53	84

THE ECOLOGY OF URBAN MEADOWS

EUROFLOR PLANT COMMUNITIES

HOW DOES EUROFLOR COMPARE WITH NATURAL MEADOWS ?

An urban planting from a landscape point of view seeks to fulfil an aesthetic role on a par with traditional floral displays and plant associations. From an ecological point of view it goes further by providing habitats for insects, bee and butterflies and nectar sources, attracting also, small rodents and birds. It does not go as far as a natural meadow in terms of long lasting ecological stability, but this is a compromise situation. Euroflor out performs natural meadows because there are many more flowers, lasting from mid-May to the first frosts in November. better suited for urban environments.

GENETIC DIVERSITY

Most of the seed in Euroflor mixtures are from European horticultural sources. The seeds are produced by traditional methods of plant breeding. NO GENETIC MODIFICATIONS (GMO's) are carried out. Seed is produced by numerous small scale farming operations from different geographical locations with varying soil types and climatic conditions, thereby ensuring genetic diversity.

Where native genotypes are to be employed, Poppy, Cornflowers, Corn cockle etc. these can be premixed with Euroflor in place of our own genotypes for areas > 7500m².

EUROFLOR & SUSTAINABILITY ?

This is an area in which we are finalising our trials. We know that the best flower performance is achieved by using annual species, which need to be sown each year.

An abandoned urban meadow will typically have 30% of its flowers in the second year and a 10 - 15% flower display in year three. This is explained by annual flower species which may or may not set seed in the climatic zone where they are sown or because certain cultivars (F1 hybrids) are not fertile.

By increasing the % of perennial plants in the mixes it becomes possible to increase the regenerating capacity of the plants in successive years, but this comes with an inferior flower performance the first year. Also it takes longer for perennial plants to become established. Uncertainty remains concerning the seasonal colour balance when plants re-seed in variable quantities each year. Species dominance will therefore be determined by local micro-climatic conditions.

The use of perennial grass species in the mix can cause the technical problem of overseeding in successive years.

Our trial plots are now showing us that a Euroflor soil seed bank is being established and we hope to introduce more sustainable Euroflor mixes within a couple of years which will include grasses and native flora.

SITE SELECTION

SOIL

To date no problems have been encountered using Euroflor on different 'normal' soil types, (loam, sandy, clay, stony, and slightly acidic to alkaline soils pH 6 - 8). No trials have been done on extreme acidic and alkaline soils, or mine and coal tips.

SLOPE

Euroflor has been trialled on steep slopes with success. Sow at 5 g / m² where 3 g / m² is sufficient on a flat surface. Avoid soil erosion by watering frequently stopping before water runoff occurs. Slopes will dry out quickly especially if they are exposed to the wind.

SOIL WEED BANKS

This is the single most aggravating factor for Urban Meadows, in extreme cases it can outcompete the flower display making it look neglected. Seeds can remain viable in the soil for many years. When surface vegetation is removed weed seeds in the soil may germinate and bare soil will become covered by seedlings that need to be removed. This may be necessary 2 or 3 times over 1 or 2 growing seasons.

On new sites weed control should ideally be managed before sowing either through the application of glyphosate fertiliser, the use of soil sterilisation equipment or by solarisation techniques.

BIRDS

Birds eat flower seed. If the site is particularly prone to bird problems, sow at 5g/m² in the hope they leave you 3g/m².

SHADE

Shaded areas vary in light intensity and light directional sources. As a basic guide, if natural vegetation grows there, so will Euroflor.

Euroflor flowers (as with all chlorophyll based vegetation) will lean towards light sources if the light source is not diffused.

Plants may not succeed in shaded areas for other reasons such as root competition for water or for leaf toxins which inhibit other vegetation (conifers, laurel hedges, Horse Chestnut trees etc ...) becoming established.

WATER AVAILABILITY

The first 3 weeks are critical because this is the germination period and the soil needs to be kept permanently moist. After germination is complete irrigate only in hot weather and before plants wilt.

SOIL PREPARATION

Soil should be prepared as for sowing grass but Euroflor does not need the same finishing quality of a level lawn.

An overworked clay soil will be reduced to dust and heavier seed may sink and not be able to put shoots up to the surface. However a slightly underworked lumpy soil will provide micro-niches favourable for seed germination in sheltered moist areas.

THE SOLORISATION TECHNIQUE



SUSTAINABLE WEED KILLING TO AVOID HERBICIDE USE :

- The soil should be moistened to a depth of at least 3 inches
- Cover small areas with black plastic sheeting which is resistant to bad weather conditions and tearing, it should be fastened down and light blocked out.
- Depending upon the seasonal and soil temperatures, weed seeds will germinate and grow under the black sheeting, but will die without light. A few inspections may be necessary to decide on the best time to remove the plastic sheeting; normally 4 – 8 weeks later.
- Once the black plastic sheeting has been removed it is important not to rework the soil, which would otherwise probably bring viable weed seed to the surface again to germinate.
- If it is necessary to de-compact the soil surface before sowing, this should be done by light superficial raking to less than ½ inch depth.

EUROFLOR INSTALLATION & MAINTENANCE SPECIFICATIONS

SEED STORAGE

- After the seed is delivered it should be kept in its original sealed packets in a cool place, until use. Seed matting should additionally be kept in the dark.

SITE PREPARATION (November to March)

- Urban meadows will grow in most soils without the addition of fertiliser^a; a soil analysis is recommended as it will indicate specific mineral deficiencies or extreme pH levels for correction.
- Cut down existing vegetation to 5 – 10 cm and remove, (or bury it nearby in order to recycle the biomass, returning the carbon to the soil)
- Apply a glyphosate based weed killer when the average diurnal temperature is > 6C .

SEED BED PREPARATION (February to April)

All surface debris and stones greater than 7cm should be removed.

- Beware of imported, previously non cultivated and contaminated top soil which may contain a lot of weed seed that will later germinate and compete with the sown flower seed. (see footnote b)
- The soil should be worked when it is moist but not waterlogged.
- Fertilisers and soil conditioners should only be added if a soil analysis indicates the necessity to do so. Add whilst the soil is being worked to ensure an even distribution.
- The soil should be worked to a depth of 4 - 6 inches and raked to form a flat seed bed.

SOWING (April to mid June or September to October for Spring Flower)

- Urban meadow flower mixes are not generally sown with grass seed.
- Sow at 3 g / m², unless otherwise stated, mixing the seed with dry sand (ratio 1 : 10).
- If possible sow twice, at 90°, in half doses to obtain a homogeneous seed cover.
- The seed should not be raked deeper than 3mm in the soil because small seed doesn't contain sufficient energy reserves to grow through deep soil.
- If the conditions are favourable, the sown areas should be rolled lightly.
- Sowing should be done in the right weather conditions, (*no wind, low soil humidity...*).

GERMINATION AND GROWTH

- If the seed bed has been well prepared competition from weed species will be greatly reduced.
- Humidity is necessary for seeds to germinate and for plants to grow. In the event of spring drought it will be necessary to irrigate during the germination period, (first 3 weeks).
- Eurofor will start flowering after 50—60 days.

MAINTENANCE

- Punctual watering may be required at any stage of the plants' growth if dry conditions persist. Programmed irrigation should however be turned off.
- Over seeding the first year will only be required if the seed bed preparation has not been carried out properly. In which case work should be done manually in the areas concerned by lightly raking, hand seeding and compacting by foot.
- Some weed species add to the biodiversity and do not need to be removed unless they are allergens, toxic or dominant.
- If colonising weed species dominate just after seeding, cut down the sward to 5 – 6 cm, repeating the operation 2 – 3 times if necessary.
- End of year maintenance consists of cutting the plants down to 10 cm at the end of the flowering period (usually after the first frosts).
- Organic matter will be absorbed into the soil during the winter months, contributing to its carbon content. The removal of green waste may be done if necessary for aesthetic reasons.

^aThere is more risk of low flowering rates through an excessive nitrogen fertilise, than not enough.

^b Fallow period. After preparing the topsoil, if possible leave a 4 – 8 week interval to let remaining undesirable seeds germinate. A second glyphosate based weed killer can thereafter be applied. This should be done after seed bed preparation (but before sowing) to avoid soil disturbance. If possible avoid importing top soil from an unknown source.

EUROFLOR

URBAN MEADOWS 2013

Existing range :

Honey
Rainbow Annuals
Ground Cover
Drysec
Sarah Bouquet
Spring Flower
Reclamation
Coloured Bouquets
Red, Pink, Orange,
Yellow, Blue, White

New for 2013



Rainbow Perennials
Classic
Discovery boxes
Flowers Gone Wild



CHOOSE A EUROFLOR MIX ACCORDING TO HEIGHT.

LOW 20 – 40 cm	MEDIUM 40 – 80 cm	HIGH 70 - 120 cm
Ground cover	Rainbow	Sarah Bouquet
Rainbow perennials	Reclamation	Reclamation
-	Drysec	-
-	Honey	-
-	Coloured Bouquets	-
-	Spring Flower	-
-	Classic	-

WHICH EUROFLOR MIXTURE AND WHERE ?

Site		Observations and recommendations
Roadside verges	Ground Cover, Drysec Rainbow Perennials	Limited height for roadside visibility, low irrigation requirements
Embankments	Drysec, Rainbow P.	Avoid high mixes which may lean over
Under barriers and fences	Ground Cover, Rainbow Perennials	Height limit for roadside visibility
Tree surrounds	Ground Cover Rainbow Perennials	Limited space for high mixtures
Roundabouts	All mixes suitable	Use low mixes on edges for visibility
Cemeteries	Spring Flower, Classic Rainbow Perennials, White.	Softer colours in natural areas
Industrial wasteland	Classic, Reclamation	
Town parks & squares	All mixes except Reclamation	Avoid high mixes in small areas
Sports field surrounds	Rainbow Perennials	Avoid high mixes in narrow areas
Shopping precincts	Ground Cover	Avoid high mixes and Honey in highly populated zones
Schools	All mixes suitable	Avoid Honey in highly populated zones
Footpath edges	Ground Cover	Avoid high mixes on the edges
River edges	All mixes suitable	More natural mixes
Country parks	All mixes suitable	Use the more natural mixes
Industrial estates	Drysec, Honey, Rainbow, Classic	Minimum maintenance
Housing estates	All mixes suitable	
Social role for flower picking	Sarah Bouquet, Drysec	
Replace formal flower beds	All mixes suitable	
Electricity & gas lines, public utilities.	Reclamation, Classic	Minimum maintenance

NATIVE SPECIES IN THE MIXES

EUROFLOR MIX	GENUS & SPECIES
Ground Cover	<i>Centaurea cyanus</i> .
Rainbow Annual	<i>Centaurea cyanus</i> , <i>Papaver rhoeas</i>
Drysec	<i>Centaurea cyanus</i> , <i>Echium vulgare</i>
Honey	<i>Borago officinalis</i> , <i>Echium vulgare</i>
Red	<i>Papaver rhoeas</i>
Pink	<i>Agrostemma githago</i>
Yellow	<i>Anthemum graveolens</i>
Blue	<i>Centaurea cyanus</i> , <i>Echium vulgare</i>
White	<i>Iberis sempervirens</i> , <i>Arabis alpina</i>
Spring Flower	<i>Papaver rhoeas</i> , <i>Echium vulgare</i>
Sarah Bouquet	<i>Borago officinalis</i> , <i>Echium vulgare</i> , <i>Iberis sempervirens</i> , <i>Arabis alpina</i> , <i>Papaver rhoeas</i> , <i>Agrostemma githago</i>
Reclamation	<i>Centaurea cyanus</i>
Rainbow Perennials	<i>Centaurea cyanus</i> , <i>Lotus corniculatus</i> , <i>Papaver rhoeas</i> , <i>Silene armeria</i> , <i>Agrostemma githago</i> , <i>Bellis perennis</i> , <i>Sanguisorba minor</i> , <i>Viola odorata</i> , <i>Achillea millefolium</i> , <i>Chrysanthemum leucanthemum</i>
Classic	<i>Bellis perennis</i> , <i>Myosotis alpestris</i> , <i>Hyssopus officinalis</i> , <i>Papaver rhoeas</i>

NATURAL LOOKING OR COLOURFUL FLAMBOYANT MIXES

NATURAL LOOKING MIXES	MIXED	VERY COLOURFUL MIXES
Sarah Bouquet	Honey	Rainbow Annuals
White, Pink	Blue, Yellow	Drysec
Classic	Reclamation	Red, Orange
-	Spring Flower	Ground Cover
-	Rainbow Perennials	-

DOMINANT COLOURS AND FLOWER SUCCESSION

EUROFLOR MIX	DOMINANT COLOURS	DOMINANT FLOWERING (in approx. chronological order)
Spring Flower	Yellow, Blue, Red,	<i>Layia</i> , <i>Echium</i> , <i>Papaver</i> , <i>Coreopsis</i>
Rainbow Annuals	Yellow, Red, Pink, Blue, White	<i>Eschscholtzia</i> , <i>Papaver</i> , <i>Centaurea</i> , <i>Coreopsis</i> , <i>Calendula</i> , <i>Cosmos</i>
Drysec	Yellow, Blue, Pink, Red,	<i>Eschscholtzia</i> , <i>Layia</i> , <i>Echium</i> <i>Centaurea</i> , <i>Linum</i> , <i>Calendula</i> .
Honey	Yellow, Blue,	<i>Eschscholtzia</i> , <i>Borago</i> , <i>Centaurea</i> , <i>Clarkia</i> , <i>Cosmos</i> .
Ground Cover	Yellow, White, Pink, Blue	<i>Eschscholtzia</i> , <i>Iberis</i> , <i>Godetia</i> , <i>Centaurea</i>
Sarah Bouquet	White, Pink, Blue, Red	<i>Eschscholtzia</i> , <i>Lobularia</i> , <i>Malcomia</i> , <i>Centaurea</i> , <i>Papaver</i> .
Reclamation	Yellow, White, Pink	<i>Centaurea</i> , <i>Tithonia</i> , <i>Cosmos</i> , <i>Zinnia</i>
Classic	Yellow, White, Red,	<i>Eschscholtzia</i> , <i>Centaurea</i> , <i>Chrysanthemum</i> ,
Rainbow Perennials	White, Yellow,	<i>Achillea</i> , <i>Eschscholtzia</i> , <i>Centaurea</i> , <i>Chrysanthemum</i>

The 2013 Euroflor Urban Meadow Range

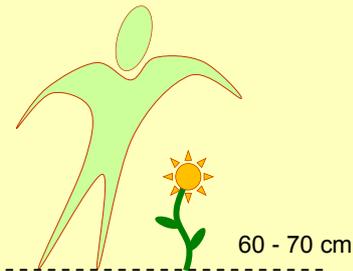
HONEY

For insect life

100% annuals

Includes :

- Borago officinalis*
- Centaurea cyanus*
- Clarkia pulchella*
- Cosmos bipinnatus* 'Sensation'
- Cosmos sulphureus*
- Eschscholtzia californica*
- Gaillardia aristata*
- Godetia grandiflora*
- Rudbeckia gloriosa*
- Zinnia* 'Lilliput' 'Sunbow'



HONEY mix is a favourite for bee keepers, farmers and orchard owners who want to keep pollinating insects busy.

HONEY mix rapidly covers the soil and flowers quickly.

Borage is a particular favourite of honey bees and bumble bees with a succession of delicate blue flowers and cosmos, an annual in various hues of pink, purple and white, is rarely seen without an insect of some sort around its stamens, flowering well into autumn.

	1	2	3	4	5
Ease of preparation					
Germination time					
Flowering period					
Ease of maintenance					
Resistance to drought					

The results are noted from 1 to 5 which correspond to the best result possible, for the stated criterion. Soils, geographic locations and annual weather patterns may vary the results. The numbers should be compared between Euroflor mixes and considered as being indicative only.

Sowing rate 1 kg = 250 - 350 m²



RAINBOW ANNUALS

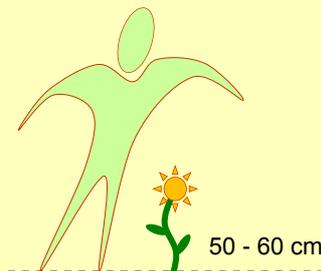
For bright colours

100% annuals

Includes :

- Arabis alpina* 'Corbeille d'argent'
- Centaurea cyanus* 'Boy Blue'
- Papaver rhoeas*
- Coreopsis picta* 'Be-Bop'
- Coreopsis tinctoria*
- Cosmidium burridgeanum* 'Phillipine'
- Cosmos* 'Trianon'
- Eschscholtzia californica*
- Gypsophilia elegans* 'Roi des Halles'
- Linum grandiflorum*
- Linum grandiflorum* 'Charmer Mix'
- Calendula officinalis* 'Pacific Beauty'

Sowing rate 1 kg = 250 - 350 m²



RAINBOW ANNUALS is a consistent favourite because of its rapid installation and its long flowering period starting 60 days after sowing right through to the first frosts.

RAINBOW ANNUALS displays a wide range of colours from early season Eschscholtzias and Iberis, to mid season Poppies, Cornflowers and Flax giving way to Marigolds and Cosmos at the end of the season.

RAINBOW ANNUALS is a striking mix of bright colours red, orange, yellow, blue and white. It successfully combines native flora with garden favourites.

	1	2	3	4	5
Ease of preparation					
Germination time					
Flowering period					
Ease of maintenance					
Resistance to drought					



The results are noted from 1 to 5 which correspond to the best result possible, for the stated criterion. Soils, geographic locations and annual weather patterns may vary the results. The numbers should be compared between Euroflor mixes and considered as being indicative only.



GROUND COVER

Low growing height

100% annuals

Includes :

- Alyssum saxatile* 'Compactum Violet Queen'
- Alyssum maritimum* 'Tapis de Neige'
- Convolvulus tricolor*
- Centaurea cyanus*
- Eschscholtzia californica* 'Ballerina'
- Godetia grandiflora*
- Coreopsis tinctoria*
- Malcomia maritima*
- Linum grandiflorum* 'Charmer mix'
- Nigella damascena* 'Miss Jekyll'
- Tagetes patula* 'Naughty Marietta'
- Callistephus chinensis*
- Calendula officinalis* 'Fiesta Gitana'
- Iberis umbellata*

As its name suggests, **Ground Cover** gives a low flower display up to 12 " high (30cm).

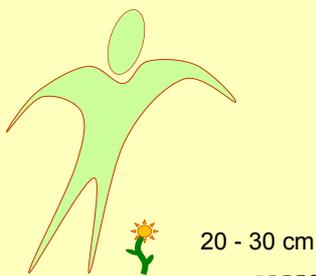
This mix is particularly useful where limited plant height is important e.g. roadside visibility on corners and roundabouts, where narrow bands are required such as tree surrounds (note the mix is not adapted to heavy shade) and taller plants would tend to become straggly and keel over.

Whilst many annual favourites are included, dwarf cultivars have been selected. Purple and white Alyssum gives way to yellow Californian Poppies, followed by Cornflowers, Virginia Stock and Flax.

The end of season is backed up by China Aster until the first frosts.

The results are noted from 1 to 5 which correspond to the best result possible, for the stated criterion. Soils, geographic locations and annual weather patterns may vary the results. The numbers should be compared between Euroflor mixes and considered as being indicative only.

Sowing rate 1 kg = 330 - 400 m²



	1	2	3	4	5
Ease of preparation					
Germination time					
Flowering period					
Ease of maintenance					
Resistance to drought					



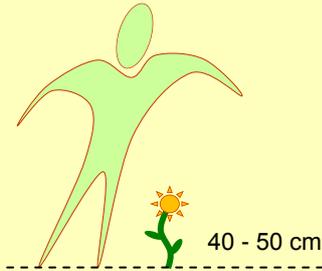
DRYSEC

For dry sites

100% annuals

Includes :

- Dimorphopheca sinuata* 'Silent Spring'
- Layia platyglossa*,
- Echium vulgare*,
- Eschscholtzia californica*
- Centaurea cyanus*
- Gyposophila elegans* 'Roi des Halles'
- Saponaria officinalis*
- Linum grandiflora*
- Linum grandiflora* 'Charmer Mix'
- Gaillardia aristata*
- Cosmos sulphureus*
- Cosmos* 'Trianon'
- Zinnia* 'Lilliput,' 'Sunbow'
- Calendula officinalis* 'Pacific Beauty'



Whilst all plants require water and generally grow better the more they have our **DRYSEC** mix is a composition which resists better to dry conditions and poor soil types, such as are typically found on roadside embankments and industrial wasteland.

Layia platyglossa is a native to southern California and *Dimorphopheca* grows in the sandy deserts of Namibia. Just two examples of the mixture's diversity and performance.

	1	2	3	4	5
Ease of preparation					
Germination time					
Flowering period					
Ease of maintenance					
Resistance to drought					

The results are noted from 1 to 5 which correspond to the best result possible, for the stated criterion. Soils, geographic locations and annual weather patterns may vary the results. The numbers should be compared between Euroflor mixes and considered as being indicative only.

Sowing rate 1 kg = 250 - 350 m²



SARAH BOUQUET

Over 30 plant species

Grown as an annual mix

Includes :

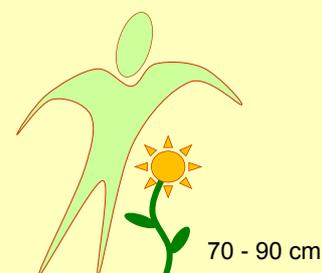
- Arabis alpina*
- Cosmos bipinnatus*
- Eschscholtzia californica*
- Gypsophila elegans*
- Helichrysum bracteatum*
- Lavatera trimestris*
- Nigella damascena*
- Delphinium consolida*
- Callistephus chinensis*
- Iberis sempervirens*
- Zinnia elegans*
- Lobularia maritima*
- Clarkia pulchella*
- Agrostemma githago*
- Godetia amoena*
- Malcomia maritima*
- Phlox drummondii dwarf mixed*
- Saponaria officinalis*

- Linum grandiflorum*
- Alyssum saxatile*
- Convolvulus tricolor*
- Borago officinalis*
- Brachycome iberidifolia*
- Lupinus nanus 'Pixie Delight'*
- Lathyrus odoratus 'Galaxy Mix'*
- Limonium sinuatum*
- Echium vulgare*
- Anthemum graveolens*
- Coreopsis tinctoria*
- Layia platyglossa*
- Rudbeckia gloriosa*
- Helianthus annuus*
- Calendula officinalis*
- Cosmidium burridgianum*
- Papaver rhoeas*
- Salvia splendens*

SARAH BOUQUET was designed as a 'shotgun' failsafe mix where the objective was to achieve the maximum biodiversity whilst keeping eye-catching bright colours to a non-dominant level.

The results after trials have been spectacular in the species and varieties which co-habit with an optimum flower performance going through into autumn which is as showy as the early summer flowers.

SARAH BOUQUET will appeal to the general public who want close access to the flowers to see what is growing in detail. The extra biodiversity means not only more flower species but bees, butterflies and other insects throughout the season.



	1	2	3	4	5
Ease of preparation					
Germination time					
Flowering period					
Ease of maintenance					
Resistance to drought					

The results are noted from 1 to 5 which correspond to the best result possible, for the stated criterion. Soils, geographic locations and annual weather patterns may vary the results. The numbers should be compared between Euroflor mixes and considered as being indicative only.

Sowing rate 1 kg = 250 - 350 m²



SPRING FLOWER

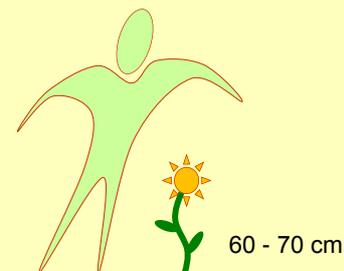
Sow in Autumn

Annuals, Biennials,

Whilst the other mixes in the catalogue are for spring sowing **SPRING FLOWER** is composed of species which can be sown in the autumn and give ground cover vegetation over winter because the plants are resistant to frosts. Flowers start blooming the following spring and continue to the beginning of summer. This mix is highly recommended for sowing in proximity to the *other* Euroflor mixes, for example in bands to ensure summer and autumn flowering on the same plot.

Includes :

- Centaurea cyanus*
- Chrysanthemum maximum*
- Clarkia elegans*
- Coreopsis tinctoria*
- Cosmos sulphureus*
- Eschscholtzia californica* 'Ballerina'
- Echium vulgare*
- Papaver rhoeas*
- Linum grandiflorum* 'Blue Dress'
- Layia platyglossa*



	1	2	3	4	5
Ease of preparation					
Germination time					
Flowering period					
Ease of maintenance					
Resistance to drought					

Sowing rate 1 kg = 250 - 350 m²

The results are noted from 1 to 5 which correspond to the best result possible, for the stated criterion. Soils, geographic locations and annual weather patterns may vary the results. The numbers should be compared between Euroflor mixes and considered as being indicative only.



RECLAMATION

For extensive planting

100% annuals

RECLAMATION is a simple mix with relatively few species and cultivars compared to other Euroflor mixes. It is has been formulated to cover large surface areas as cheaply as possible, such as industrial and urban renewal projects, set-aside etc.

Sown at only 2g / m² its flowering period persists until frosts with Tithonia shown here below in August, it was followed by pink, red, and white Cosmos. A great refuge for many insect species.

Includes :

- Centaurea cyanus*
- Cosmos 'Sensation hybrids'*
- Cosmos sulphureus,*
- Tithonia 'Torch'*
- Zinnia 'Lilliput,' 'Sunbow'*



30 - 110 cm

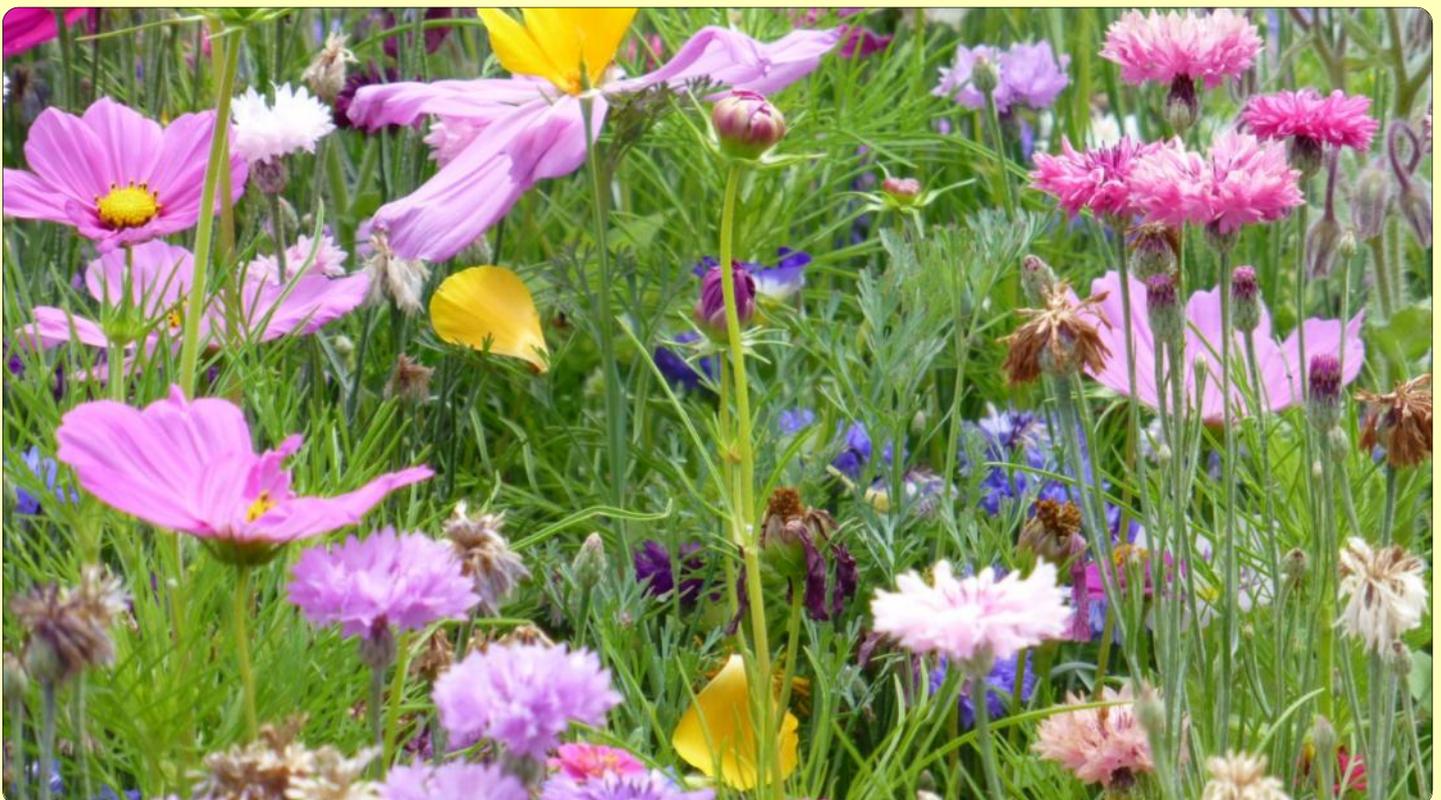
Sowing rate 400g = 200 m²

	1	2	3	4	5
Ease of preperation					
Germination time					
Flowering period					
Ease of maintenance					
Resistance to drought					



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The photos show flowering at two different times in the year, left Tithonia, below Cosmos and Cornflower.



COLOUR BOUQUETS

Choose the mixes by the individual colours you want to sow. Reproduce the club colours, 'fly' the union jack in red, white and blue, company logos and publicity features can all be achieved with separately coloured Euroflor bouquet mixes.

Blue

Borago officinalis
Centaurea cyanus 'Boy Blue'
Nigella damascena
Lupinus nanus 'Pixie delight'
Linum grandiflorum 'Blue Dress'
Delphinium consolida 'Sublime'
Lathyrus odoratus 'Galaxy Mix'



Outstanding impact schemes can be achieved, by using contrasting the colours individually or by mixing them to your own 'recipe'.

Red

Papaver rhoeas
Zinnia elegans 'Scarlet Flame'
Zinnia elegans 'Lilliput' 'Sunbow'
Salvia splendens 'Scarlet Flame'
Eschscholtzia californica 'Roi de Feux'
Linum grandiflorum



Yellow

Anethum graveolens
Coreopsis tinctoria
Eschscholtzia californica
Elianthus annuus
Helichrysum bracteatum
Layia platyglossus
Rudbeckia gloriosa



Colour Bouquets are the ingredients to flexible and innovative urban meadow mixtures.

Pink

Agrostemma githago 'Milas'
Cosmos bipinnatus 'Sensation'
Malcomia maritima
Saponaria officinalis
Lavatera trimestris
Godetia amoena
Phlox drummondii dwarf mixed



Orange

Zinnia 'Lilliput' 'Orange King'
Eschscholtzia californica
Calendula officinalis 'Orange King'
Rudbeckia gloriosa
Dimorphoteca hybrids
Helichrysum bracteatum 'Sultane Salmon'
Cerianthus x allionii



White

Gypsophila elegans
Lobularia maritima
Thlaspi glaucum
Lavatera trimestris 'Mont Blanc'
Arabis alpina
Iberis sempervirens
Zinnia elegans 'Polar Bear'



Sowing rate 1 kg = 250 - 350 m²

RAINBOW PERENNIALS

For more permanent displays

10% annuals, 90% perennials



- Alyssum saxatile* 'Compactum'
- Arabis alpina* 'Rosea Grandiflora'
- Arabis alpina* 'Corbeille d'argent'
- C. maximum* 'Silver Princess'
- Coreopsis tinctoria* 'Illico'
- Escholtzia californica* 'Ballerina'
- Gaillardia aristata* 'Primavera'
- Cheiranthus cheiri* 'Tom Thumb'
- Hyssopus officinalis*
- Papaver rhoeas*
- Linum perenne* 'Blue Sapphire'
- L. perenne* 'Nanum Album Diamond'
- Myosotis alpestris*
- Dianthus plumarius*
- Bellis perennis*
- Prunella grandiflora* 'Freelander mixture'
- Saponaria ocymoides / officinalis*
- Calendula officinalis* 'Fiesta Gitana'
- Iberis umbellata*

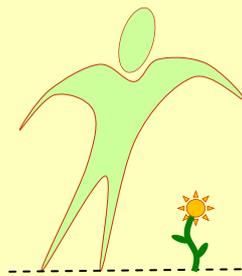
Rainbow perennials is the result of ten years of research. The formulation includes a few annuals to ensure 50% flowering in the 1st year from 90 - 100 days after sowing.

The flowering period extends from June to September.

Having the advantage of coming back each year without the need of resowing, this formulation is not as spectacular as an annual Euroflor mix and subject to regional variation in its performance.

Rainbow perennials does away with the need to prepare seed beds each year with a corresponding economy on labour costs.

The results are noted from 1 to 5 which correspond to the best result possible, for the stated criterion. Soils, geographic locations and annual weather patterns may vary the results. The numbers should be compared between Euroflor mixes and considered as being indicative only.



30 - 50 cm

Sowing rate 1 kg = 400 - 500 m²

	1	2	3	4	5
Ease of preparation					
Germination time					
Flowering period					
Ease of maintenance					
Resistance to drought					



CLASSIC

Wild & Garden Flowers

Annuals, Biennials & Perennials

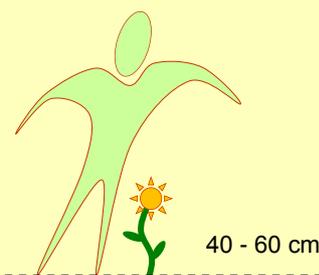


For a more natural looking meadow without the usual sparseness of 100% indigenous species, Euroflor **Classic** combines the advantage of wild flowers and garden flowers.

It is particularly useful in intermediate zones between the countryside and urban areas. Areas in a natural looking public park would be a good example.

The large number of species in this mix compensates for the longer germination period of indigenous flower species. It can be sown with or without the wild flower companion grass mix (TG17).

- Centaurea cyanus*
- Chrysanthemum coronarium*
- Gypsophila elegans*
- Calendula officinalis*
- Saponaria vaccaria*
- Agrostemma*
- Papaver Rhoeas*
- Zinnia pumila*
- Iberis Umbellata*
- Delphinium ajacis*
- Linum rubrum*
- Lavatera*
- Clarkia elegans*
- Godetia Whitneyi*
- Nigella*
- Alyssum saxatile*
- Arabis Alpina*
- Aubrietia deltoidea*
- Campanula carpatica*
- Cheiranthus allionii*
- Cheirantus cheiri*
- Linum perenne*
- Dianthus barbatus*
- Primula elatior*
- Silene armeria*
- Silene pendula compacta*
- Viola cornuta*
- Viola odorata*
- Chrysanthemum leucanthemum*
- Sanguisorba minor*
- Lotus corniculatus*
- Achillea millefolium*
- Bellis perennis*



	1	2	3	4	5
Ease of preparation					
Germination time					
Flowering period					
Ease of maintenance					
Resistance to drought					

The results are noted from 1 to 5 which correspond to the best result possible, for the stated criterion. Soils, geographic locations and annual weather patterns may vary the results. The numbers should be compared between Euroflor mixes and considered as being indicative only.

Sowing rate 1 kg
= 450 - 500 m²

The photo (right) shows **Classic** flowering in its 2nd season without maintenance from the time of sowing the year before.



THE EUROFLOR DISCOVERY BOX



If you hesitate in choosing your Euroflor mix, Discovery boxes provide the solution.



Discovery boxes :

- ◆ Allow you to compare the colours and textures of the Euroflor range, with 10 foil sealed, different seed mixes in one box.
- ◆ Enable you to prioritise the best performing mixes in your area and choose your favourites for following years,
- ◆ Facilitate handling and sowing with standardised 50g packs to give a total floral display area of up to 150 m² (10 x 15 m²).



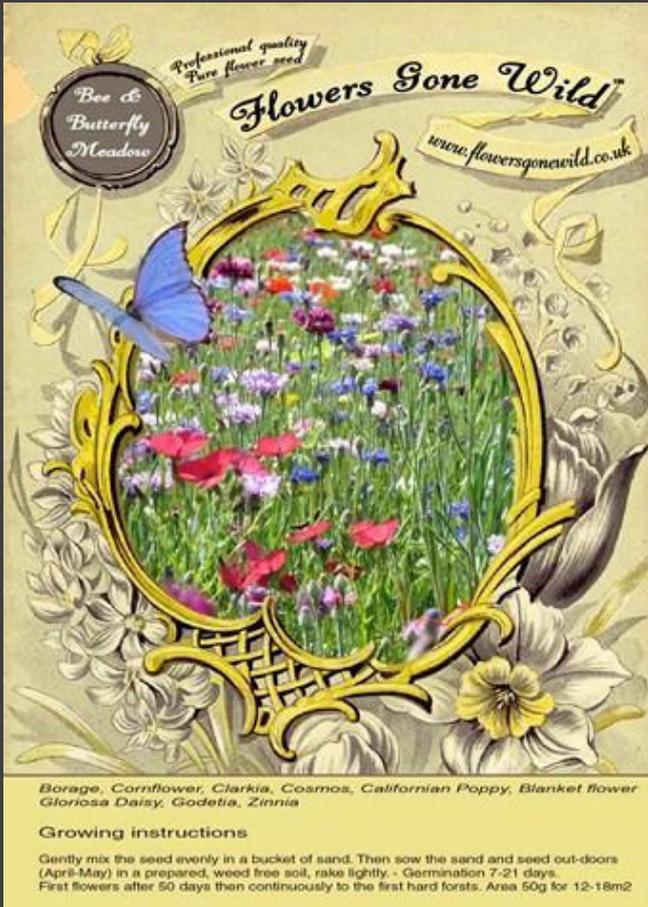
EUROFLOR

introduces



Flowers Gone Wild

BEE & BUTTERFLY MEADOW



This is equivalent to Euroflor Honey seed now made available to the discerning gardener through Golf Pro Shops, Garden Centres, and other retail outlets.

The seed packets are made from the same heavy duty foil that is used to stock Kew's Millennium Seed Bank which is the largest global plant conservation project in the world, thereby ensuring maximum viability.

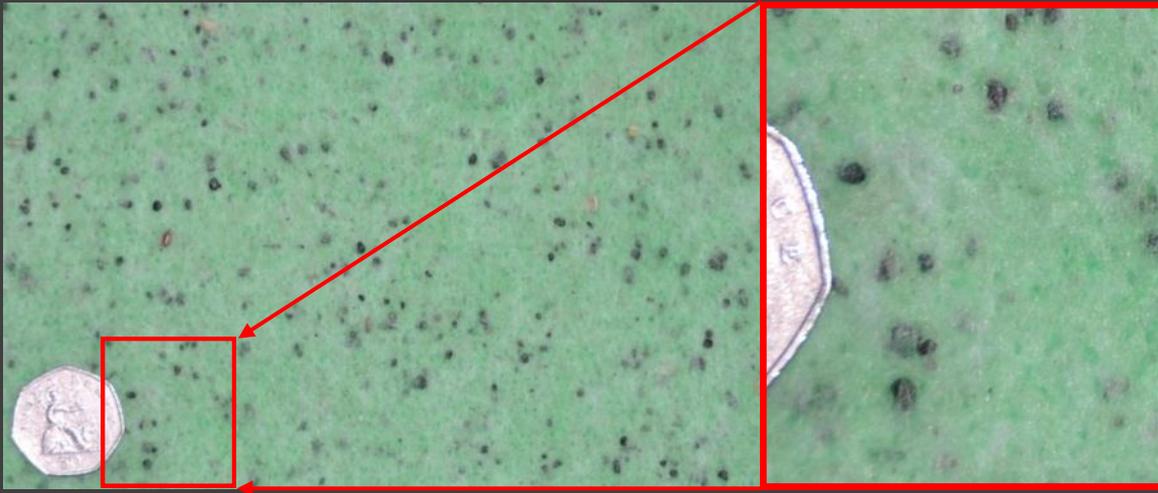


Prepared in 20g (for 5 - 7m²) & 50g (12 - 18m²) packets with an attractive presentation label;

Delivered :
20 seed packets (20g) per box and,
10 seed packets (50g) per box.

They also make attractive gifts for company promotional activities and money making garden fetes.

EUROFLOR SEED MATTING



Euroflor RAINBOW ANNUALS and grass seed is also available in rolls of biodegradable seed matting 2.07 x 25m. Made from viscose, a derivative of wood pulp, it confers many advantages over packet seed :

- Easy preparation on difficult sites especially slopes.
- Sowing rates are predetermined
- The matting helps with weed suppression whilst the seed germinates
- It contributes to erosion control
- Moisture is maintained around the seed during germination, thereby increasing seed viability and helping establishment.



Covered by sand or just rolled out over a prepared seed bed, seeds germinate with the same degree of success.



The wet matting hugs the ground until it biodegrades in 2 - 3 weeks.



Grass seed impregnated matting opens up new possibilities for difficult sites.

FLOWER PERFORMANCE THROUGH THE SEASON

Euroflor has been marketed in continental Europe for 10 years and we know that regional climatic differences lead to differing flowering performances. To ensure the Euroflor flower mixes remain balanced in the U.K. they are evaluated for their flower performance quantitatively and visually enabling adaptive adjustments to be made to ensure the mixture remains well balanced. 18 trial sites were conducted in the U.K. in 2010 some with up to 25 mixes.

Ref. GCE 22

sowing date 23/04/10

	18/6	22/6	25/6	30/6	4/7	12/7	17/7	25/7	31/7	8/8	15/8	22/8	28/8	5/9	11/9	19/9
Weekly Rainfall mm	2	0	0	2	30	0	64	41	8							
Foilage cover %	100%	95%	75%	60%	40%	30%	70%	60%	80%	80%	75%	80%	70%	85%	80%	70%
Flower performance	0.0	1.0	2.0	3.0	4.0	4.5	5.0	4.5	3.5	2.0	1.5	2.0	3.5	2.5	3.0	3.5
<i>A.saxatile</i> 'Compactum violet Queen'															*	
<i>Convolvulus tricolor</i>						*	*	*	*	2.5%	*	*	5%	*		
<i>Dimorpotheca hybrids</i>																
<i>Eschscholtzia californica</i>			2.5%	5%	5%	10%	5%	5%	2.5%	2.5%	2.5%	*	5%	*	2.5%	2.5%
<i>Malcomia maritima</i>																
<i>Linum grandiflorum</i>				*	*	*	*									
<i>Matthiola bicornis</i>		2.5%	10%	15%	20%	15%	10%	5%	*	*	2.5%		*	*	*	*
<i>Calendula officinalis</i> 'Fiesta Gitana'								*	*	*			*	*	*	2.5%
<i>Iberis umbellata</i>			2.5%	5%	20%	25%	25%	20%	2.5%	*						
<i>Zinnia</i> 'Persian Carpet'									*	*	2.5%	5%	5%	2.5%	5%	5%
<i>Iberis sempervirens</i>			*	*	2.5%	5.0%	10%	*	*							
<i>Lobularia maritima</i>	*	2.5%	10%	15%	10%	10%	*	*	*	*	*	*		2.5%	*	5%
<i>Linum perenne</i> 'Blue Sapphire'					*	*	5%	*			2.5%	5%	*	2.5%	2.5%	*
<i>Echium vulgare</i>					*	5%	10%	10%	5%	5%	5%	5%	5.0%	2.5%	*	5%
<i>Lagurus ovatus</i>							5%	10%	10%	10%	20%	15%	10%	5%	10%	10%
<i>Gypsophylia elegans</i> 'Roi des Halles'								5%								
<i>Nigella</i>									*	*						

Example of a trial evaluation chart monitoring flower performance, rated 1 to 5 as an overall appreciation of mix GCC 22. From this information for the following season we will reduce the dominance of *Iberis umbellata*, increase *A. saxatile*, *Calendula* and *Linum* and investigate why 2 species did not flower.



Euroflor plots are monitored photographically for their successive flower performance.

TRIALS IN 2012 and 2013 for 2014

Which of these formulations being trialled in 2012 will be chosen as new introductions in 2014. To date they do not have names; those that do not meet our desired standards will be abandoned.



TROUBLESHOOTING

What can go wrong with Euroflor if the correct procedures are not followed

Problem	Possible causes	Remedies
Incomplete germination and plant growth	Seed bed preparation is irregular	Wait, see the extent of the irregularity - overseed
	Seed was stored in warm storage conditions	Use new seed
	Lack of soil humidity within the first 21 day period	Overseed
	Seed stored too long	Use new seed
	Soil contains toxic elements	Check soil analysis
	Mistaken seed sowing rate	Overseed
Weed infestation	Soil seed bank not depleted prior to sowing	Hand weeding, restart if too much weed, include fallow period.
Thick foliage growth no or few flowers	Soil too rich, too much nitrogen	Soil analysis to confirm NPK
	Sowing rate too dense	Start again
Plants grow high and fall over	Sowing rate too dense	Start again
	Insufficient light	Select a different site
	Soil too rich, too much nitrogen	Select a different site



30 days after sowing, the seed here sown at 5g / m² is too dense, the plants will flower but are susceptible to fall over.

EUROFLOR 2012



Photos by courtesy of wildflower turf, grower of Euroflor .

EUROFLOR 2012



RAINBOW ANNUALS at Bristol City Council



RECLAMATION. York University

EUROFLOR 2012



RAINBOW. London in Bloom



SARAH BOUQUET (mid - season) at Southchurch Park, Southend-on-Sea

EUROFLOR 2012



GROUND COVER at Tonbridge race course



SARAH BOUQUET (early season) at Brighton

EUROFLOR 2012



RAINBOW at Leeds



RAINBOW at Inch Park, Edinburgh

EUROFLOR FLOWER IDENTIFICATION



Dimorphoteca sinuata 'Palm Spring'



Linum grandiflorum



Clarkia pulchella



Lavatera trimestris 'Silver Cup'



Helianthus annuus
'Paquito Colorado'



Saponaria ocymoides



Gypsophila elegans

EUROFLOR FLOWER IDENTIFICATION



Centaurea cyanus



Convolvulus tricolor



Lupinus nanus 'Pixie Delight'



Borago officinalis



Agrostemma githago
'Milas'



Iberis umbellata



Godetia grandiflora

EUROFLOR FLOWER IDENTIFICATION



Linum grandiflorum 'Charmer Mix'



Eschscholtzia californica 'Ballerina'



Zinnia 'Sunbow mix'



Coreopsis grandiflora



Delphinium consolida 'Sublime'



Lathyrus odoratus 'Galaxy Mix'



Amaranthus caudatus



Echium vulgare

EUROFLOR FLOWER IDENTIFICATION



Cosmidium burridgeanum '
Philippine'



Papaver rhoeas



Calendula officinalis
'Pacific Beauty'



Helianthus annuus
'Dwarf Sungold'



Layia platygossa



Cosmos bipinnatus



Iberis sempevirens



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