

# **Guidance on the Sustainable Use of Pesticides or Integrated Pest Management Preparation for the Municipal Area of Ennis**

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Ill Health in agriculture. Health & Safety Authority

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# **1. EXECUTIVE SUMMARY**

This document provides guidance for the Municipal Area of Ennis on the sustainable use of pesticides or Integrated Pest Management.

The guidance will set out the legislative background and the regulation of pesticides in Ireland.

In order for the user to have a complete understanding of Integrated Pest Management Section 3 defines commonly used terms including Herbicides, Graminicides, Insecticides and Fungicides.

A schedule of all approved Plant Protection Products including the chemical name, commercial name etc is included in Section 4 of the document.

The document then examines both Noxious Weeds and Invasive Weeds and looks at controls both chemical and cultural for these type of weeds.

Section 8 of the document focuses on specific areas of the Municipal District of Ennis, in particular, playing pitches and parks, paths and roads, Special Areas of Conservation. Integrated Pest Management in relation to these specific areas is discussed in detail.

The requirements for storage of PPPs and the training requirement for those using PPPs are detailed in Sections 8 and 9.

It is recommended that this document is reviewed annually and any changes to legislation, the approved chemicals list, storage requirements or training requirements be updated.

## **2. OVERVIEW OF LEGISLATION AND REGULATIONS**

The sustainable use of pesticides or Integrated Pest Management (IPM) is provided for in A Directive on the Sustainable Use of Pesticides - Directive 2009/128/EC. Among the requirements of the Directive each member state must adopt a National Action Plan on the sustainable use of pesticides.

### **2.1 Directive 2009/128/EC**

Directive 2009/128/EC of the European Parliament and of the Council of 21 October 2009, more commonly referred to as ‘the Sustainable Use Directive’, established a framework to achieve the sustainable use of pesticides.

The Directive was transposed into Irish law by Statutory Instrument No. 155 of 2012, European Communities (Sustainable Use of Pesticides) Regulations 2012

The Directive defines ‘Integrated Pest Management’ as

*‘careful consideration of all available plant protection methods and subsequent integration of appropriate measures that discourage the development of populations of harmful organisms and keep the use of plant protection products and other forms of intervention to levels that are economically and ecologically justified and reduce or minimise risks to human health and the environment. ‘Integrated pest management’ emphasises the growth of a healthy crop with the least possible disruption to agro-ecosystems and encourages natural pest control mechanisms’.*

### **2.2 National Action Plan**

One of the requirements of the Directive is for each state to adopt a National Action Plan for sustainable use of pesticides. Article 4 of the Directive requires that the National Action Plan should:

*‘set up their quantitative objectives, targets, measures and timetables to reduce risks and impacts of pesticide use on human health and the environment and to encourage the development and introduction of integrated pest management and of alternative approaches or techniques in order to reduce dependency on the use of pesticides. These targets may cover different areas of concern, for example worker protection, protection of the environment, residues, use of specific techniques or use in specific crops’.*

The National Action Plan therefore defines the national strategy for the achievement of a sustainable use of pesticides.

The NAP addresses the issue under four broad headings:

- Training, Education and Information Exchange
- Controls on Application Equipment
- Controls on Storage supply and Use
- Integrated Pest Management.

Adopting the principals and objectives of the NAP should form the basis of any strategy for the Sustainable use of Plant Protection Products in the Municipal District.

### **2.3 Regulation of Plant Protection Products (PPPs)**

The European Parliament and Council agreed 4 pieces of legislation pertaining to Plant Protection Products in 2009.

- 1) Regulation (EC) No 1107/2009 - A Regulation on the placing of plant protection products on the market. This has been implemented in Ireland by Statutory Instrument No. 159 of 2012.
- 2) Regulation (EC) No 1185/2009 – A Regulation on statistics on pesticides. This has been implemented in Ireland by Statutory Instrument No. 159 of 2012.
- 3) DIRECTIVE 2009/127/EC - A Directive on farm machinery to include PPP application equipment. The Directive was transposed in Ireland by Statutory Instrument No. 310 of 2011.
- 4) DIRECTIVE 2009/128/EC - A Directive on the sustainable use of pesticides. The Directive was transposed in Ireland by Statutory Instrument No. 155 of 2012.

### **2.4 Noxious Weeds Act, 1936**

Section 2 (1) of the Act states:

*‘Whenever the Minister is satisfied that plants of any particular species or variety growing, or in the opinion of the Minister likely to become established, in any area are in that area noxious weeds, the Minister may make an order declaring such plants to be noxious weeds in that area as specified in such order’.*

The following orders were subsequently made:

Noxious Weeds (Thistle, Ragwort, and Dock) Order, 1937 (S.I. No. 103 of 1937)

Noxious Weeds (Common Barberry) Order, 1958 (S.I. No. 120 of 1958)

Noxious Weeds (Male Wild Hop Plant) Order, 1965 (S.I. No. 189 of 1965)

Noxious Weeds (Wild Oat) Order, 1973 (S.I. No. 194 of 1973).

### **2.5 Wildlife Acts, 1976 and 2000**

The Acts include a number of provisions relating to non-native invasive species.

In addition to Ireland’s obligations under the EU Habitats Directive the Irish Government has also ratified a number of International Conventions. These place an obligation on the government to address the issues relating to non-native invasive species in Ireland.

Examples of such non-native invasive species include:

Japanese Knotweed

Giant Hogweed

## Gunnera or Giant Rhubarb



### 3. DEFINITIONS

#### **3.1 Integrated Pest Management. I.P.M.**

The definition of I.P.M. as per the Department of Agriculture and food is

‘Careful consideration of all available plant protection methods and subsequent integration of appropriate measures that discourage the development of harmful organisms and keeps the use of plant protection products (P.P.P.) and other forms of intervention to levels that are economically and ecologically justified and reduce or minimise risks to human health and the environment. Integrated Pest Management emphasises the growth of a healthy crop with the least possible disruption to agro-ecosystems and encourages natural pest control mechanisms’.

In relation to the Municipal District of Ennis the above definition is relevant despite the fact that the District does not have direct responsibility for an agro-ecosystem.

Ennis is situated in a sensitive area with several diverse and sensitive/susceptible habitats and ecosystems. These include

- River Fergus
- Ballyalla Lake
- Karst Limestone Areas
- Rich Historical Sites
- Natural Springs
- Semi Natural Woodlands

Included in the above are a number of designated National Heritage Areas (NHA).

Each of the above requires to be treated and maintained with the ultimate care and any or all combinations of Plant Protection Products used within the above areas must take cognisance of their harmful side effects and the limitations with respect to usage within sensitive ecosystems such as water, water services and particularly with respect to human and animal health.

The above definition requires explanations in order that a Management Plan can be prepared and agreed which meets the requirements and provisions of the Sustainable Use Directive System, (S.U.D.S.), as required by European & Irish legislation.

Definitions Which Require Explanation are as Follows.

### **3.2 Development of Harmful Organisms.**

‘Development of Harmful Organisms’ – a definition of an organism according to the Penguin Dictionary of Science is ‘Any individual living entity, which one can place within a proper biological classification scheme or taxonomy’. This allows a harmful organism to be a virus, fungus

plant or animal which causes harm directly to another plant or animal or indirectly to water sources, air sources or any living element within an ecosystem or habitat. Examples of harmful organisms are Fungi which cause diseases such as Potato Blight, Red Thread on Perennial Ryegrass, Animal or Human diseases, Weeds such as Daisies and Dandelions on football pitches, Ragwort or other noxious weeds on roadsides, open spaces and grasslands. Weeds growing in car parks and road verges. Japanese Knotweed, Giant Hogweed and invasive species present or in the future which have adverse effects on native flora and fauna or to human health. In other words harmful organisms which stunt or kill other desirable organisms. Plants which are in locations or within crops where they are unwelcome and become known as ‘weeds’. Plants, (weeds) which visually impair car parks, flower and shrub beds etc.

Insects, Beetles, Molluscs together with mammals such as rats, mice, rabbits etc who cause damage to other desirable plants and animals including humans.

In Integrated Pest Management the word management is vital. Intense control of an organism will adversely affect numerous innocent creatures and might cause dominance of other organisms due to the inter balance being put out of sync. Diversity must be promoted and not reduced as any reduction will allow, through reduction in competition the establishment of unwanted organisms being either plant, animal etc.

### **3.3 Plant Protection Products. P.P.P.**

These are the chemical products including

- Herbicides - for weed control
- Insecticides - for insect, beetle etc control
- Fungicides - for disease control
- Biocides - for mammal plant control
- Biological Controls using Nematodes, parasitic wasps etc - to control harmful insects
- Plant Growth Regulants – to reduce physical damage to plants
- Physical Control Systems including Cultural Control Methods

#### **3.3.1 Herbicides.**

Herbicide products are the most used and will continue to be the pesticide type most used by the Municipal District of Ennis. Their uses for weed control vary from road edges to playing pitches to car parks to amenity paths and walks. In addition Herbicides are used to control noxious weeds and invasive species on public road verges, on amenity grassland on river and lake banks and waste ground.

The types and range of Herbicides available have evolved particularly over the last 25 years and as labour costs have increased and crop production has intensified, Herbicides became an integral part of intensive crop production to reduce competition from weed species and to aid mechanical harvesting of intensive crop production. Similarly in the Amenity Sector, hand weeding became unsustainable. Weeds are seen as a blemish from a Tidy Towns viewpoint. Playing Pitch standards have escalated, the presence of weeds negate high performance and damage the required grass sward. Dependence on Herbicides has gone to the extent that plants are being genetically modified so that they become resistant to certain herbicides whereby enhanced weed control can be achieved.

The Sustainable Use of Pesticide Directive bring with it challenges, challenges which can be met but will require initial changes to work practices and may escalate costs initially until Training Courses and Machine monitoring has been undertaken and successfully completed. Training and monitoring must continue on an ongoing cycle. There must also be changes in our visual expectations; we must learn to tolerate some 'weed' plants to ensure biodiversity.

Herbicides can be defined as Total and Selective.

### **3.3.2 Total Herbicides.**

These Herbicides do not discriminate between plant types. When applied they will control all plants, some with greater effect than others. An example of a Total Herbicide is Glyphosate, used in various concentrations to control weed grasses including scotch and perennial and annual weeds.

### **3.3.3 Selective or Plant Specific Herbicides Mostly Systemic.**

Those which control only certain weed plant types within a crop but do not harm the crop plants. An example is a Hormonal Herbicide which controls broadleaved weeds on playing pitches but does not harm the grasses. Examples of weeds killed are Daisies, Dandelion, and Thistle. A further example is an herbicide or Herbicide Cocktail which controls noxious weeds such a Ragwort but does not harm the grass within which the weed grows.

### **3.3.4 Graminicides.**

Selective or plant specific herbicides which controls a range of grass weeds in a wide range of broad based crops.

### **3.3.5 Residual Herbicides.**

Those which remain on the ground over a period of time hindering germination and emergence of weed seeds. They are used in hard landscape areas, on road verges, public pathways etc. They are applied on clean surfaces however they can be mixed with the Total Herbicide such as Glyphosate to give combined Contact & Residual control to existing weed infested areas. An example is Premazor 57 plus Glyphosate. The only current Residual Herbicide used to control weeds within a shrub bed area is Propyzamide (kerb Granules).

Residual Herbicides are those often regarded as products which could through run-off in heavy rainfall enter water systems and effect water quality, therefore use, concentrations and timing of applications must be carefully monitored.

### **3.3.6 Insecticides.**

Probably the most controversial group of pesticides, most notably due to the over use of D.D.T. which built up in the systems of animals and birds. Controversial and also the use of Insecticides and Fungicides applied from aeroplanes however, this is not a practice undertaken in Ireland except maybe in forestry.

The number and types of insecticides used in the Municipal District are few in number. Controls of Pests used by the Municipal District of Ennis are

Control of Aphids on roses and other ornamental flowers, shrubs, perennials and ornamental trees

Control of Leaf Minors & Leaf Suckers on ornamental shrubs and ornamental trees

Control of Leatherjackets, Frit Flies and Wire Worms in sports pitches and other grassed areas.

Control of Slugs and Snails on flower beds and nursery beds

Control of Caterpillars on particular bedding plants

The most extensive use of insecticides are the control of Leatherjackets, Wire Worms & Frit Flies which damage grass roots on pitches but also attract Crows, in particular Rooks who dig for these larva causing extensive surface damage to the grasses.

### **3.3.7 Fungicides.**

Used to control a wide range of diseases in Vegetable Fruit Cereals and all food crops. The presence of these chemical fungicides in food crops is carefully monitored on an ongoing cycle. This is particularly the case with imported vegetables and fruits which originate in countries where the regulation of and monitoring of Plant Protection Products used during the growing and harvesting may not be as rigid as in Ireland.

Fungicide use within the Municipal District of Ennis is very limited and potentially is confined to the application of fungicides on roses and other plants, or the fungicidal control of Red Thread Disease on Dwarf Perennial Ryegrasses in playing pitches however, fungicide treatments are rarely advised. This disease is normally controlled by adjusting the nutrient balances within the growing medium. As the Municipal District does not directly or indirectly have responsibility for food production, the problem with fungicide and other residue on food products is not relevant to this study.

### **3.3.8 Biological Control Systems.**

- Use of Parasitic Wasps to control aphids (Greenflies)
- Use of Nematodes to control slugs and snails

The above has limited relevance to the Municipal District of Ennis except for the control of slugs and snails in annual flower beds.

### **3.3.9 Physical & Non Invasive Control Mechanisms/Controls.**

To include the following systems.

- Use of weed retarding fabrics on shrub beds
- Use of flame for the control of weeds on roads, road verges, car parks etc.
- Use of hot water for the control of weeds on roads, road verges, car parks etc.

### **3.3.10 Non Invasive Cultural Controls.**

- Correct spacing of plants or grasses i.e. correct seeding rates
- Balanced Nutrient Programmes over the lifetime of a crop, playing pitches etc
- Planting and sowing of disease resistant cultivars such as Red Thread resistant grass types for a playing pitch or Rose types for rose plantings
- Organic production of food crops both for professional and/or amateur use i.e. for Local Authority promoted allotments
- Application of Mulches which retard weeds or composts which retard weed germination and retain soil moisture.

## 4. CONTROLS – CHEMICAL AND NON CHEMICAL

### 4.1 Noxious Weeds.

<u>Name</u>	<u>Plant Type</u>	<u>Found</u>	<u>Non Chemical Control</u>	<u>Chemical Control</u>
Spear Thistle (Cirsium Vulgare)	Biennial Plant. Flowering July to August. Spreads through	Fields. Roadsides. Waste Ground.	Topping. Regular cutting prior to flowering. Not very effective.	Mid May to June. MCPA &/or 2-4D Amine in seedling and rosette stage.
Field Thistle. (Creeping Thistle). (Cirsium Arvense).	Perennial Plant. Spread by creeping root system and by seeds.	Fields. Roadsides.	Topping. Regular cutting prior to flowering. Not very effective.	MCPA &/or 2-4D. Mid May to Mid June.
Common Ragwort. (Senecio jacobaea). Buachalan Buidhe.	Biennial or short lived. Perennial Plant. Spread by seeds.	Fields. Pastures. Roadsides. Waste Ground.	Control by hand. Best carried out when soil moist. Gloves essential. Regular cutting prior to flowering.	2-4D &/or MCPA. Apply when plants are young, rosette stage. April to May.
Curled Dock. (Rumex crispus).	Perennial Plant with a well developed top root. Spread by Taproot fragments and by seeds.	Waste Ground. Fields. Pasture. Roadsides.	Limited value, pull in moist soils and when shoot develops. Cutting/Topping regularly prior to flowering.	2-4D Amine &/or MCPA prior to seed Glyphosate in non grass areas. Triclopyr & Aminopyralid prior to seed developing.

## **4.2 Non Native Invasive Species.**

<u>Name</u>	<u>Plant Type</u>	<u>Found</u>	<u>Non Chemical Control</u>	<u>Chemical Control</u>
Japanese Knotweed. (Fallopia japonica) Also Giant Knotweed. (Fallopia sachalinensis)	Perennial Plant. Spread vegetatively only by root (rhizome) fragments and foliage fragments.	Roadsides. Gardens. Near Water. Deciduous woodlands.	Excavation under rigorous composting regime.	Foliar Application or Injection. Glyphosate in May & June.
Himalayan Balsam. (Impatiens grandulifera)	Annual Plant. Spread by seeds.	Waste Ground.	Hand Pulling on an ongoing cycle. Mowing/Cutting on an ongoing cycle.	Glyphosate in April & May with active growth.
Giant Hogweed. (Heracleum Mantegazzianum)	Biennial Plant. Spread by seeds.	River Banks. In Wet Ground.	Mowing & low Cutting effective with seedling plants only.	Glyphosate when plant is growing strongly. May & June. 2-4D Amine April to May.
Giant Rhubarb. (Gunnera tinctoria)	Perennial Plant. Spread by Rhizomes and seed.	Wet Wild Areas. Prefers Acid Soil.	Grubbing or Mechanical Excavator.	Glyphosate. 2-4D Amine. Triclopyr/ Aminopyralid.
Montbretia. (Crocosmia x crocosmiiflora)	Perennial Plant. Spread by underground corms and by seed. Possibly prefers wild areas.	Roadsides. Hedges. Rivers. Streams.	Grubbing and Mechanical Excavation.	Glyphosate.

### 4.3 Herbicides.

<u>Chemical</u> Name	<u>Commercial</u> Name	<u>PCS</u> Reg.No.	<u>Uses</u>	<u>Method</u>
2-4D. }Use MCPA. }separately Dicamba. }Or }in }combination. Mecoprop. }	Holster x 2.	04854.	Selective Herbicide for control of Broadleaved weeds on Grass Areas and Pitches.	<u>Do Not</u> use on wet ground near Water - Retain Maximum Buffer.
	Dicophar.	02297	Selective Herbicide for control of Broadleaved	<u>Do Not</u> use on wet ground near Water – Retain Maximum Buffer.
Triclopyr. } and } Aminopyralid. }	Garlon Ultra.	04473	Control of Invasive Species and woody weeds. Can be injected into stems of Invasive Species.	Inject stems of Invasive Species at water side.  Retain 3M Buffer.
Glyphosate 360g/L.	Roundup Biactive.	02313	Total Herbicide for the control of a wide range of weeds.	Retain 3M Buffer.
Glyphosate 480g/L.	Roundup Flex	04593	Applied to growing weed foliage. Numerous uses.	
Diflufenican. and Glyphosate.	Pistol	02530	Systemic and Residual Herbicide used on hard surfaces such as roads, paths etc.	Use in dry weather only.  30M Buffer.
Oxadiazon 250g/L.	Festival Mapp 14606	Not Reg. }		
Glufosinate Ammonium.	Finale MAPP 1009	Not Reg. }		Not applicable at present in Ireland.
Nomix Duel. Glyphosate Plus. Sucfosulfuran.	Nomix Duel	03080	Systemic and Residual Herbicide for hard surfaces.	Retain 3M Water Buffer



### Why should I use Nomix Dual?

#### Approved for use on hard surfaces

- use in amenity and industrial situations, including hard surfaces, shrub beds, gravelled areas, tree bases, parks and around obstacles

#### Fast acting control, lasting up to 6 months

- effective combination of Glyphosate and Sulfosulfuron

#### Highly effective technically advanced herbicide

- the only low volume residual herbicide with hard surface approval

#### Safe for bystanders, residents and pets

- low volume, targeted formulation and no breathable droplets

#### Efficient and cost effective

- one residual application per year

#### Safe for operators

- non-irritant formulation and ready to use pack reduces the risk of error and operator exposure

#### Where can I use Nomix Dual?

Nomix Dual can be used on hard surfaces and any natural surface not intended to bear vegetation. It can also be used on permeable surfaces overlying soil and around amenity vegetation, including shrub beds and gravelled areas.

Nomix Dual is a low volume residual herbicide that is used to control a wide range of emerged annual and perennial grasses, as well as broad-leaved weeds.

[Industrial areas](#) [Shrub beds](#) [Hard surfaces](#) [Off-track rail](#) [Gravelled areas](#)

#### How does Nomix Dual

##### work?

The active ingredients in Nomix Dual are Glyphosate and Sulfosulfuron.

Glyphosate is a contact herbicide, absorbed by the leaves and stems of the weed and translocated to other parts of the plant, including the roots and rhizomes. Sulfosulfuron is the residual ingredient. It is both foliar and soil acting, preventing seed germination for up to 6 months.

Nomix Dual is highly effective. The low volume formulation uses unique emulsion technology, ensuring it sticks to the leaf and is absorbed easily.

#### How do I apply Nomix

##### Dual?

Nomix Dual is a pre-mixed herbicide for use with the Nomix range of Total Droplet Control (TDC) low volume applicators.

Nomix Dual is quick and easy to apply. The ready to use herbicide pack connects directly to the applicator, without any need for mixing or measuring. Simply shake the pack, connect it to the applicator, calibrate and you are ready to start spraying.

[Nomix Dual is applied at a rate of 9 litres per hectare.](#)

<u>Chemical</u> Name	<u>Commercial</u> Name	<u>PCS</u> Reg.No.	<u>Uses</u>	<u>Method</u>
Nomix Glyphosate.	Nomix Blade	03854	Systemic total Herbicide.	Retain 3M Water Buffer.
	Nomix Systemic	02454	Systemic total Herbicide.	Retain 3M Water Buffer.

## PISTOL

GB84992615B - RA4 - ARTICLE 5471353

A non-selective herbicide for control of annual and perennial weeds on natural surfaces not intended to bear vegetation, permeable surfaces overlaying soil and hard surfaces (railway ballast only).

A suspension concentrate formulation containing 250g/L glyphosate and 40g/L diflufenican  
MAPP 17451

### SAFETY PRECAUTIONS

#### Operator Protection

Engineering control of operator exposure must be used where reasonably practicable in addition to the following personal protective equipment:

WEAR SUITABLE PROTECTIVE GLOVES when handling the concentrate. WEAR SUITABLE PROTECTIVE GLOVES AND

COVERALLS when applying by hand held equipment. However, engineering controls may replace personal protective equipment if a COSHH assessment shows they provide an equal or higher standard of protection.

WASH HANDS before eating and drinking and after work.

#### Environmental Protection

Do not contaminate water with the product or its container. Do not clean application equipment near surface water. Avoid

contamination via drains from farmyards and roads. Extreme care must be taken to avoid spray drift onto non-crop plants

outside the target area. Since there is a risk to aquatic life from use, direct spray must not be allowed to fall within 2 m of

the top of the bank of any static or flowing waterbody or the top of a ditch which is dry at the time of application. Spray

must be aimed away from water.

#### Storage and Disposal

KEEP AWAY FROM FOOD, DRINK AND ANIMAL FEEDINGSTUFFS. KEEP OUT OF REACH OF CHILDREN. KEEP IN

ORIGINAL CONTAINER, tightly closed, in a safe place. EMPTY CONTAINER COMPLETELY and dispose of safely.

PROTECT FROM FROST, RINSE CONTAINER THOROUGHLY by using an integrated pressure rinsing device or manually

rinse three times. Add washings to sprayer at time of filling and dispose of safely

### **Warning**

#### **Pistol®**

A suspension concentrate formulation containing 250g/L glyphosate and 40g/L diflufenican

Very toxic to aquatic life with long lasting effects

Contains 1,2-Benzisothiazolin-3-one. May produce an allergic reaction.

Dispose of contents/container to a licensed hazardous-waste disposal contractor or collection site except for empty

clean containers which can be disposed of as non-hazardous waste.

To avoid risks to human health and the environment, comply with the instructions for use.

### **IMPORTANT INFORMATION**

FOR USE ONLY AS AN INDUSTRIAL HERBICIDE

Situation: For use on natural surfaces not intended to bear vegetation, permeable surfaces overlaying soil, and hard surfaces (railway ballast only).

Maximum individual dose: 4.5 litres product/hectare

Maximum number of treatments: 1 per year

Latest time of application: End of July

#### **Other specific restrictions:**

This product must only be used on natural or porous surfaces such as gravel where the user can establish that the

underlying surface is soil and railway ballast surfaces. Do not use if an impermeable membrane lies between the

porous surface and the soil.

Do not apply to any non-porous man-made surfaces

To minimise spray drift, the product must be applied using a nozzle capable of producing a coarse quality spray.

**READ THE LABEL BEFORE USE. USING THIS PRODUCT IN A MANNER THAT IS INCONSISTENT WITH THE LABEL**

**MAY BE AN OFFENCE. FOLLOW THE CODE OF PRACTICE FOR USING PLANT PROTECTION PRODUCTS**

#### **DIRECTIONS FOR USE**

IMPORTANT: This information is approved as part of the Product Label. All instructions within this section must be read carefully

in order to obtain safe and successful use of this product.

#### **GENERAL INFORMATION**

PISTOL® is a suspension concentrate formulation containing 250 g/L glyphosate and 40 g/L diflufenican. PISTOL® has foliar

absorbed translocated activity, combined with soil acting properties, providing pre-emergence weed control. The product is applied

post-emergence to control a wide range of annual and perennial broad-leaved weeds and grasses on porous surfaces on land not intended to bear vegetation.

**Bayer Tip:** For established deep rooted perennial weeds such as dandelion, thistle, dock and nettles which may be re-generating,

a post-emergence application is ideally required.

#### **RESTRICTIONS**

Since there is a risk to aquatic life from use, direct spray must not be allowed to fall within 2 m of the top of the bank of any static

or flowing waterbody or the top of a ditch which is dry at the time of application. Spray must be aimed away from water.

Applications should not be made to plants growing under stress conditions, such as drought or water-logging, as reduced levels of control may result.

Do not spray in windy weather.

Extreme care must be taken to avoid drift onto non-target plants. This includes leaf surfaces, young bark or suckers of valued

plants. Failure to do so may result in permanent damage or plant death.

Where PISTOL® has been applied to sites that are subsequently to be cleared or grubbed, a period of at least 6 months should elapse

between treatment and the sowing and planting of subsequent crops. In addition, the soil should be ploughed or dug afterwards to ensure thorough mixing in order to remove any risk of damaging subsequent crops or planting. Where 'PISTOL®' or other products containing diflufenican are applied in successive years, levels of diflufenican will build up in the soil. Even where soils are thoroughly dug there may be a risk of damage to subsequent plantings. Care should be taken when applying PISTOL® as heavy rain following application may wash the herbicide onto sensitive areas such as newly sown grass and areas about to be planted. Where the soil organic matter content is greater than 10%, or for example where leaves have collected or where a mat of organic matter has built up, pre-emergence activity will be reduced. For maximum persistence of activity the area treated should not be cultivated or raked following application. For maximum pre-emergence and residual activity from PISTOL®, ensure good coverage of the spray swath. Untreated areas will not be protected.

Overdosing should be avoided.

Do not add any wetting agent or adjuvant oil as this may result in reduced activity.

**DO NOT APPLY PISTOL® OVER DRAINS OR IN DRAINAGE CHANNELS, GULLIES OR SIMILAR STRUCTURES FOR MOVING WATER.**

### **WEEDS CONTROLLED**

Strains of some annual weeds (e.g. black-grass, wild-oats, and Italian rye-grass) have developed resistance to herbicides which may lead to poor control. A strategy for preventing and managing such resistance should be adopted. This should include integrating herbicides with a programme of cultural control measures. Guidelines have been produced by the Weed Resistance Action Group and copies are available from the HGCA, CPA, your distributor, crop adviser or product manufacturer.

PISTOL® has a broad spectrum of activity if used at the recommended rate and under optimum conditions. It should give initial 'knockdown' of a wide variety of broad-leaved and grass weeds and thereafter residual control for a wide variety of broad-leaved weeds for at least 3 months, and up to 4 months on hard surfaces (railway ballast only).

### **Weeds controlled such as:**

Annual meadow-grass, annual nettle, buttercup, Canadian fleabane, mouse ear chickweed, chickweed, common daisy, common groundsel, ragwort, couch grass, cranesbill sp, dandelion, dock, fat hen, field forget-me-not, mayweed, perennial thistle, plantain sp, polygonaceae sp, red dead-nettle, rough-stalked meadow-grass, sowthistle, speedwell, willowherb.

Grasses may be the first weeds to return in treated areas and may require re-treatment with a glyphosate based product such as CDA Vanquish® Biactive.

**Bayer Tip:** Treated areas which may have been protected from the spray swath such as areas of soil shaded by a larger weed canopy at application may require re-treatment with a glyphosate based product such as CDA Vanquish® Biactive.

### **Long term control**

Perennial weeds such as dandelions and docks emerging from established root-stocks after application will not be controlled.

### **SITUATION SPECIFIC INFORMATION**

#### **Use Areas**

PISTOL® may be used in non-crop areas against weeds in open soil and against weeds growing in gravel or other porous surfaces. Examples of suitable use areas include fence lines, strips of land adjacent to buildings, industrial sites, timber yards,

farm yards, oil and gas storage sites, power stations, electric sub stations, beneath pylons, around street/park obstacles.

PISTOL® may be used on railway track, railway sidings and other ballast areas of rail infrastructure (knapsack application only).

PISTOL® must not be used on non-porous man made surfaces, for example paved areas, concrete or tarmac car parks and footpaths.

PISTOL® may be used on porous surfaces such as gravel ONLY where the underlying surface is soil.

Do not use if an

impermeable membrane lies between the gravel and the soil. The product must not be used on gravel where the underlying

surface is concrete, tarmac or any other non-porous surface, or in situations where there is potential for run-off into surface waters.

Pistol - 5L - GB - GB84992615B - RA4

Batch Number :

The (COSHH) Control of Substances Hazardous to Health Regulations may apply to the use of this product at work.

For 24 hour emergency information contact Bayer CropScience Limited

Telephone: 0800 220876 or nearest National Poisons Information Centre

Bayer CropScience Limited

230 Cambridge Science Park

Milton Road

Cambridge CB4 0WB

Tel: 00800 1214 9451

[www.environmentalscience.bayer.co.uk](http://www.environmentalscience.bayer.co.uk) for MSDS and larger label

#### **Application Timing**

Apply PISTOL® post-emergence of the weeds at any time from February until the end of July, provided that the weeds are

actively growing and have not begun the process of natural die-back. At least six hours, but preferably 24 hours of dry weather

are required immediately following application for optimum control.

**Bayer Tip:** For post-emergence application ideally annual broad-leaved weeds should have at least two fully expanded true

leaves and annual grasses should be at the one leaf growth stage or beyond. Some perennial weeds, including docks, perennial

sowthistle and willowherb are best treated just before flowering or the setting of seed.

#### **MIXING AND SPRAYING**

Shake well before use. Half fill the spray tank with clean water. Start gentle agitation and add the required quantity of PISTOL®.

Mix and top up to the required volume with water. Use immediately.

**WASH OUT THE SPRAYER THOROUGHLY AFTER USE, USING A WETTING AGENT OR PROPRIETARY TANK CLEANER WITH TWO**

**RINSES, AS TRACES OF PISTOL® MAY CAUSE HARM TO OTHER SUSCEPTIBLE PLANTS SPRAYED LATER.**

#### **Equipment**

Use a knapsack sprayer fitted with a coarse nozzle using a pressure of around 1-2 bars to provide a coarse spray. Use of

anti-drift nozzles or the use of a protector shield to avoid any drift is recommended.

**NOZZLE:** Hypro Polijet AN0.6 nozzle (provided) gives, subject to calibration: a coarse spray with a flow rate of 0.6 L/min at 1

bar, giving 225L/ha at 4kph walking speed, swath width of 40 cm, 40 cm nozzle height, or use similar nozzles that give coarse

spray.

Good and even coverage of foliage and soil is essential for optimum activity.

PISTOL® and CDA VANQUISH® BIACTIVE are registered trademarks

#### **4.4 Insecticides.**

<u>Chemical</u> <u>Name</u>	<u>Commercial</u> <u>Name</u>	<u>PCS</u> <u>Reg.No.</u>	<u>Uses</u>	<u>Method</u>
Chlorpyrifos (48%)	Dursban.	02540	Used for the control Leatherjackets and Frit Flies on grass areas.	Apply in Dry Conditions only. Retain 10M Water Buffer.
Metaldehyde (6%)	Metarex RG.	00851	Used for the control of slugs and snails.	

#### **4.5 Fungicides.**

Iprodione 255g/L.	Chipco Green.	02714	Used for the control of Red Thread disease in Playing Pitches.	Rarely used. Apply in Dry Conditions only. Retain 10M Water Buffer.
Mancozeb.	Dithane.	03705	Control of Algae Growth and Synthetic Pitches.	Use under Moist Conditions.

#### **4.6 Specific Recommendations.**

Area	Weeds to be Treated	Non Chemical Treatment	Chemical Treatment
1. Bye-Pass from Clarecastle Roundabout to Lahinch Road Roundabout & Primary Roads	Road Verges Paths Weed Grasses Annual Weeds Noxious Weeds	Proposed Hot Water Treatment Regular Cutting Strimming Pulling & Topping	Glyphosate PCS 04593 3 – 4 Applications per Year Spot Treatment at Rosette Stage with Holster PCS 04854 Or Dipochar 02297
2. Centre Town Streets & Lanes	Street Verges Paths Between Paving Slabs Around Gullies Weed Grasses	Proposed Hot Water Treatment Pulling & Hoeing	Ongoing Micro-droplet with Glyphosate (Nomix Blade) PCS 03854 Micro-droplet with Pistol PCS 02530
3. Car Parks	Verges & Paths Around Gullies Between Paving Slabs Weed Grasses Annual Weeds Biannual Weeds	Proposed Hot Water Treatment Pulling & Hoeing	Ongoing Micro-droplet with Glyphosate <u>Only</u> (Nomix Blade) PCS 03854 Main Car Parks adjoining Fergus River Retain Buffer Zone of 3M
4. Walking Paths Gravel	Weed Grasses Annual Weeds Perennial Weeds	Pulling & Hoeing	Ongoing Spot Treatment with Glyphosate (Nomix Blade) PCS 03854



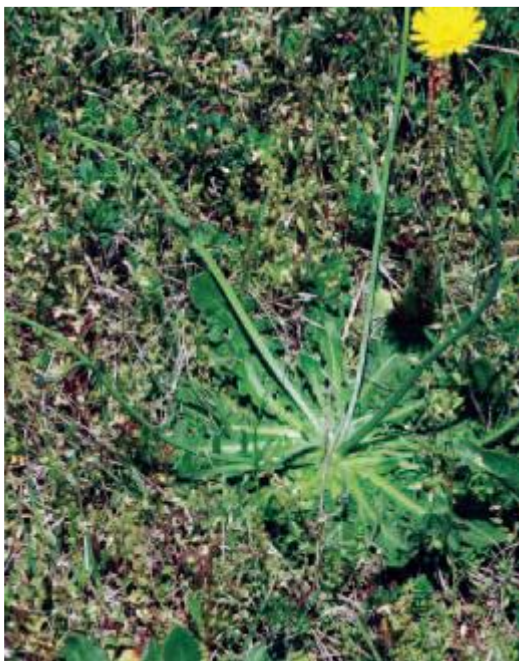
Area	Weeds to be Treated	Non Chemical Treatment	Chemical Treatment
5. Grass Areas Playing Pitches	Broadleaf Weeds	Proper Nutrient Balance Overseed with Dwarf Perennial Ryegrasses	One (1) Treatment per Annum Holster PCS 04854 Or Dicophar PCS 02297
6. Grass Areas Amenity	Noxious Weeds such as Ragwort	Pull	Spot Treat at Rosette Stage with Holster PCS 04854 Or Dicophar PCS 02297
7. SAC's Ballyalla Lake Fergus River	Treat for Invasive Species such as Japanese Knotweed Treat for Noxious Weeds	Pull Cut Top	Spot Treatment or Injection of Japanese Knotweed No Chemical Treatment for Noxious Weeds <u>Buffer Zone 300M</u>
8. Synthetic Playing Pitches	Weed Grasses Annual Weeds Perennial Weeds Algae Growth on Synthetic Leaves	Pull   Limited to Good Maintenance Practices	Glyphosate Roundup Flex PCS 04593 Dithane PCS 03705



**Dandelion**  
*Taraxacum officinale* (Dandelion) is a stemless perennial. With its deep taproots, the Dandelion is identified by the single yellow flower at the end of each long, hollow stalk. When the weed matures, the yellow flower matures into white, puff balls containing seeds. Dandelion can be found throughout the continental United States, Alaska and Hawaii.



**Plantain Broadleaf**  
*Plantago major* (Broadleaf Plantain) is a perennial herb that can be identified by its distinctive basal rosette of leaves and fibrous root system. Broadleaf Plantain leaves are egg-shaped, with parallel main Veins.



**Cat's-ear Dandelion**

*Hypochoeris radicata* (Cat's-ear Dandelion) is a perennial weed with multiple yellow upright flowers that resemble Dandelions. Cat's-ear Dandelions can be differentiated by the toothed and slightly pointed edges of the leaves. Cat's-ear Dandelions



Common Chickweed

*Stellaria media* (Common Chickweed) is a matforming winter annual or short-lived perennial in temperate regions and is identified by alternating, shiny leaves - egg or oval, to broadly elliptic, in shape. Upper leaves are without petiole, while the lower leaves have sparsely, hairy long

petiole.

## 5. NOXIOUS WEEDS

Noxious weeds include Ragwort (*Senecio jacobaea*), Thistle (*Cirsium* spp) Common Barberry (*Berberis vulgaris*), Male Wild Hop (*Hunulus lupulus*) and Spring Wild Out (*Avena fatua*) are scheduled as Noxious Weeds under the Noxious Weed Act of 1936. “Any person responsible for land on which these weeds are growing is liable upon conviction to be fined. A person responsible for land may be an owner, occupier, user or manager of the land. In the case of public roads, parks etc. Local Authorities have similar obligations.”

### **5.1 Ragwort.**

*Senecia jacobaea* or Buachalan buidhe a stout perennial/biennial plant growing up to 1.0M high with bright yellow flower heads. A widespread weed, growing on roadside verges, embankments, unmanaged fields and waste ground. Flowering from June to September. It is an extremely poisonous plant to livestock, cattle and horses but not to sheep.

It is difficult to control because it appears between vulnerable wild plants, in shrub beds and in un-accessible places such as steep banks.

#### **5.1.1 Cultural Control.**

Cut out growing plants in their rosette stage prior to flowering. Small stands should be hand pulled in damp soil using gloves.

#### **5.1.2 Chemical Control.**

The ability of Ragwort to grow in places which are difficult to chemically control, for example within hedging or a motorway makes this plant an ever increasing problem.

In open ground Ragwort can be controlled using a Systemic Selective Herbicide such a 2-4D and MCPA together. Apply pre flowering from March to May and again in September when new seedlings emerge. Spot treatment with the 2-4D amine and MCPA together using a knapsack is effective; however the downside is that this combination herbicide also controls useful wild flowering plants. The use of various sized wind shields on booms might help on motorways and road verges, again at the expense of useful plants. Debris of the plants must be disposed of safely.



## **5.2 Dock (*Rumex crispus*).**

An erect glabrous perennial found on roadsides, meadows and waste ground.

### **5.2.1 Cultural Control.**

Spreads particularly by seed but also by underground rhizomes, therefore in pulling the plant part of the root rhizome will be left in the ground and will shoot producing a new plant.

### **5.2.2 Chemical Control.**

Use Mecoprop or MCPA from May to August, usually as spot treatments using a knapsack sprayer.



### **5.3 Spear Thistle (*Cirsium vulgare*).**

A biennial plant found in rosette stage on low cut grass areas and can cause discomfort underfoot or on a playing pitch when coming into contact with exposed skin.

Treat as per Playing Pitch Section.

**Note** Use of 2-4D and MCPA. Must not be used close to water.

Difficult to control on road verges other than by early and numerous cuttings or by using a boom sprayer fitted with a Windfoil and follows NRA safety protocols. Use one or two booms in non peak traffic times with adequate signage.



### **5.4 Field Thistle (*Cirsium arvense*).**

A perennial plant found in fields, roadsides and in waste ground.

#### **5.4.1 Cultural Control.**

Topping and regular cutting prior to flowering. This method is only partially effective.

#### **5.4.2 Chemical Control.**

MCPA and 2-4D to actively growing plants in May and June.





## 6. INVASIVE SPECIES

Invasive species include plants, mammals, invertebrates, bivalves, micro organisms which have entered our island through numerous methods, many inadvertently by humans. They include

- American Mink, brought to Ireland to be farmed under strict conditions but have escaped and are now a major threat to our native wildlife
- Grey Squirrels, brought to Ireland in a basket and released as a wedding celebration surprise but are now damaging our Red Squirrel population
- Plants include Japanese Knotweed, collected in Japan in the 19<sup>th</sup> century and brought to Britain and Ireland as a decorative plant for herbaceous borders, again escaping and now a major problem
- Giant Hogweed, introduced from the Caucasus to Victorian gardens in 19<sup>th</sup> century, escaping and is now a major and painful skin irritant
- Gunnera or Giant Rhubarb, a Victorian addition to the garden, now a major problem in Connemara and particularly on Achill Island.

### **6.1 Japanese Knotweed.**

The plant which is becoming a problem in the Municipal District of Ennis is Japanese Knotweed (*Fallopia japonica*) a perennial plant introduced from Japan in the 19<sup>th</sup> century.

Only female plants of Japanese Knotweed have been found to date in Britain and Ireland, therefore spread is by vegetative means i.e. by small parts of the stem or by underground roots or rhizomes, very small pieces of shoots or underground rhizomes can result in new growth of the plant.

Like many of the invasive plant species, Japanese Knotweed is usually found near water or in wet locations. It spreads along watercourses, transport routes and waste ground. Its adverse effects include

- Restriction of normal growth and establishment of native plants by forming dense impermeable growth patterns of up to 3M high which impedes and eliminates native plant growth
- Can grow through tarmacadam and concrete paths and roadways
- Can damage house foundations
- Reduce the normal flow rates of streams and small rivers.

#### **6.1.1 Cultural Control.**

Not easy to control other than by chemical methods. Preventative methods only reduce or eliminate the spread of Knotweed.

- Ensure that any soil purchases are from Knotweed free locations
- That Knotweed clumps are not touched, cut down or composted
- That Knotweed clumps have an exclusion fence and the fenced

area might be 250sq.m. with the Knotweed clump in the centre of this area

- That the exclusion fence is kept in place up to and including the elimination of the clump, for up to three (3) years
- The Knotweed plant can be dug up together with the surrounding root effected soil and taken to a specialist composting facility where chemical methods are used to eliminate the Knotweed. This is a very expensive treatment and not yet available in Munster.

### **6.1.2 Chemical Controls.**

1. The use of a Glyphosate product has been used successfully over a number of years. A Glyphosate product is best applied during active growth and when there is optimum leaf canopy, in order that good leaf up-take and transfer of the herbicides active ingredient into the roots.

Glyphosate is the only product recommended for use near a water source such as a lake, stream or river.

2. Glyphosate plus 2-4D amine this combination has been used successfully, however the combination is not recommended for near or at water sources. Barrier of five (5) meters should be put in place.
3. Triclopyr (120g/L) plus Aminopyralid (12g/L). Another systemic herbicide combination which is giving good control of Japanese Knotweed. Best applied early in the season but only with a full leaf canopy.
4. 2-4D Amine can also be used on its own and gives limited control. It is not approved for applying close to a water source.

### **6.1.3 General Requirements for Japanese Knotweed Control with Chemical Treatments.**

- Continue applications until all new growths of Japanese Knotweed have stopped and continue to wait for a further 24 months. Continue to monitor the area and surrounds for signs of re growth
- Monitor downstream of Japanese Knotweed infestation for 1Km to determine if rhizomes from the infected area have broken away and re-generated downstream

Herbicides can be applied using 'No Mix' applicators or by stem injection apparatus when the number of stems are low or in sensitive areas.

Rhizomes are modified stems which grow horizontally underground. They differ from roots in that rhizomes when cut or disturbed can produce new plants like stem cuttings.



## **6.2. Himalayan Balsam (*Impatiens glandulifera*).**

Introduced as a garden plant in the 1850's from India. It is an annual plant (life cycle 12 months), which spreads by seed. Himalayan Balsam is related to the often grown Busy Lizzie. It rapidly establishes in moist ground and along river banks producing vast quantities of viable seed.

Himalayan Balsam forms dense stands to a height of 0.6 – 0.9M, thereby limiting light and moisture to desirable native plants such as grasses and low growing annual and perennial plants. It grows vigorously in full sunlight and in shade. Being an annual plant it dies out in the winter leaving large areas of bare ground which is open to other non invasive species to exploit and also to erosion near rivers, lakes and streams.

### **6.2.1 Cultural Control.**

Only partially successful. Cutting and mowing where applicable can give some control but must be carried out on an ongoing cycle particularly prior to the plant coming into flower.

Alternatively the plants can be grubbed out as roots are shallow.

### 6.2.2 Chemical Control.

Control during active growth using Glyphosate particularly prior to flowering. A possible long term control might suggest:-

- Treat with Glyphosate prior to flowering
- Shallow cultivation post Glyphosate application
- Sow a native grass seed mix
- Control by cutting and using 2-4D Amine once the grasses have matured.



### **6.3 Giant Hogweed (Heracleum Mantegazzianum).**

Introduced from the Caucasus and south west Asia into Victorian gardens in the 19<sup>th</sup> century for its size, foliage and inflorescence. Hogweed is a biennial or perennial plant producing thousands of viable seed per flower head. Grows up to 5M in height. It can be confused with Hogweed (Heracleum sphondylium) which grows between 1-1.5M in height or Cow Parsley (Anthriscus sylvestris) growing between 0.6-0.9M high, both having similar looking inflorescence.

Unlike Japanese Knotweed, Giant Hogweed spread via viable seeds which are flat circular discs roughly 10-15mm in diameter. These disc-like seeds can float easily in water and are taken downstream in rivers, where when coming to rest on the bank of a river, germinate and rapidly increase the population of this invasive plant. Key identification features are

- Grows to between 4 and 5M in height, leaves expand up to 1.5M in width and have a jagged appearance with spiky endings
- Large flower heads on inflorescences are 500mm (0.5M) wide
  
- Flower heads may not appear for a few years after the young plant develops
- Large seeds in clusters
- Purple blotched stems with fine hairs
- Hollow stems
- Seeds are 10-15mm in diameter, flat discs

Giant Hogweed is spread by seed only. The seed can be spread by water or adhering to shoes and machinery etc. It is found in wet locations near rivers and streams and on waste ground. When touched or brushed against it causes an allergic reaction to the skin in the form of blistering and burning which is very acute. The blisters are very slow to heal and can leave long term scarring particularly on children. Giant Hogweed's adverse effects include

- Intense pain to humans and animals
- Limits the spread of native plant life
- Can lead to the closure of public parks where it is found growing
- Dies back in the winter leaving banks of rivers and streams vulnerable to erosion
- Seed can remain dormant for many years, it is suggested that seeds are viable for between 10 and 12 years

#### **6.3.1 Cultural Control.**

Dig up non flowering plants in March and April to a depth of 200-250mm and dispose crowns by deep burial.

#### **6.3.2 Chemical Control.**

Apply herbicide prior to flowering of Giant Hogweed in April and May. Continue spot spraying on a two to three week cycle to control any late germinating plants.

Control using a Glyphosate product applied as a spot treatment when plant is 1-1.5M high. Repeated applications of Glyphosate will be necessary over a number of years to control late germinating seeds.

2-4D amine plus MCPA plus Dicamba hormonal systemic herbicide cocktail, ensuring a barrier is kept between the applying of this cocktail and water, of no less than 3M.

Triclopyr (120g/L) plus Aminopyralid (12g/L).

Producer Dow Agrochemicals UK Ltd as Garlon Ultra. Rate 4L/H in 200L water or knapsack 200mls in 10L water.

Buffer from watercourse – 3M.

All operatives working with Giant Hogweed must wear full protective clothing including hands and face. Clothing should be washed down with water after use but prior to removing.





#### **6.4. Giant Rhubarb (*Gunnera tinctoria* – Brazilian or Chilean).**

There are two very closely related species of *Gunnera* which are difficult to differentiate from each other. It is believed that *Gunnera tinctoria* is the species which is highly invasive and which has become naturalised in the West of Ireland. A Victorian garden plant, ideal for wet ground and on the fringes of bog pools, streams and rivers. Grows to 2-2.5M in height and each leaf can be up to 2M wide. It has become a major problem around Killary Harbour and particularly on Achill Island. It is also recorded in North Clare close to Lisdoonvarna.

Spread by seeds, vegetatively by rhizomes which are carried downstream by flood water in rivers and streams. Its diverse effects include

- Restriction of normal growth of native plants by depriving native plants of light, space and nutrition
- Reduces the flow rate of rivers and streams
- Causes subsidence on river banks particularly when *Gunnera* spp is dormant in winter and water levels highest.

##### **6.4.1 Cultural Control.**

Not effective.

##### **6.4.2 Chemical Control.**

As per Giant Knotweed.

*Gunnera* is most likely found in acid soils therefore not of significant interest in the Municipal Area of Ennis.





## **6.5 Ragweed (*Ambrosia artemisiifolia*).**

A medium to tall hairy annual of possibly North American origin but has got a foothold in Europe since the 1950's. With global warming its rapid move northwards might soon see its arrival in or around Ennis.

Ragweed is an annual plant spread by seed. Seed of Ragweed could be in commercially produced bird seed used in bird feeders but its main source is its natural spread northwards with higher annual temperatures.

The pollen of Ragweed is a major contributing factor in Asthma and other severe allergic reactions. Pollen is produced from August to September and one plant can produce up to one billion pollen grains.

It may become a problem in the Municipal Area of Ennis in the near future.

## **Cabadex**

Product Registration Number: MAPP 13948/PCS No. 03749

A suspension emulsion formulation containing 100 g/litre fluroxypyr and 2.5 g/litre florasulam.

A post-emergence herbicide for use on MANAGED AMENITY TURF, including domestic lawns, and AMENITY GRASSLAND for the control of DAISY, DANDELION, CLOVER, BUTTERCUP, RIBWORT PLANTAIN and other broad-leaved weeds.

The (COSHH) Control of Substances Hazardous to Health Regulations may apply to the use of this product at work (UK only).

### **SAFETY PRECAUTIONS**

#### **Operator protection:**

Engineering control of operator exposure must be used where reasonably practicable in addition

to the following personal protective equipment:

WEAR SUITABLE PROTECTIVE GLOVES AND FACE PROTECTION (FACESHIELD) when handling the concentrate.

However, engineering controls may replace personal protective equipment if a COSHH assessment shows they provide an equal or higher standard of protection (UK only).

DO NOT BREATHE SPRAY.

WHEN USING DO NOT EAT, DRINK OR SMOKE.

WASH CONCENTRATE from skin and eyes immediately.

WASH HANDS AND EXPOSED SKIN before eating and drinking, and after work.

#### **Environmental protection:**

DO NOT CONTAMINATE WATER with the product or its container. Do not clean application equipment near surface water. Avoid contamination via drains from yards and roads.

#### **Storage and disposal:**

KEEP IN ORIGINAL CONTAINER, tightly closed in a safe place.

RINSE CONTAINER THOROUGHLY by using an integrated pressure rinsing device or manually

rinsing three times. Add washings to sprayer at time of filling and dispose of safely.

DO NOT RE-USE CONTAINER for any purpose.

#### **Dow AgroSciences Limited**

CPC2 Capital Park, Fulbourn, Cambridge, CB21 5XE.

Telephone: +44 (0) 1462 457272 Fax: +44 (0) 1462 426605  
24 Hour Emergency Telephone Number: +44 (0) 1553 761 251  
This label is compliant with the CPA Voluntary Initiative Guidance (UK only).

**IMPORTANT INFORMATION**

FOR USE ONLY AS A HORTICULTURAL HERBICIDE

**Read the label before use. Using this product in a manner that is inconsistent with the label may be an offence. Follow the Code of Practice for using Plant Protection Products.**

**Situation Maximum**

**Individual Dose**

**Maximum Number**

**of Applications**

Managed amenity  
turf, lawns, amenity  
grassland

2.0 litres product

per hectare

One per year

**Product Identifier according to Art.18 of Reg. (EC) No 1272/2008**

**[CLP]:** Cabadex®; Hydrocarbons, C9, aromatics

**WARNING**

**CAUSES SKIN IRRITATION**

**MAY CAUSE AN ALLERGIC SKIN REACTION**

**CAUSES SERIOUS EYE IRRITATION**

**MAY CAUSE RESPIRATORY IRRITATION**

**MAY CAUSE DROWSINESS OR DIZZINESS**

**VERY TOXIC TO AQUATIC LIFE WITH LONG LASTING EFFECTS**

Wear protective gloves/clothing/eye/face protection.

IF ON SKIN: Wash with plenty of soap and water.

IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.

IF IN EYES: Rinse cautiously with water for several minutes.

Remove contact lenses, if present and easy to do. Continue rinsing.

Do NOT induce vomiting.

Dispose of contents/container to a licensed waste disposal contractor or collection site except for empty clean triple rinsed containers which can be disposed of as non-hazardous waste.

**To avoid risks to human health and the environment, comply with the instructions for use.**

**MAPP 13948/PCS No. 03749**

**READ DIRECTIONS FOR USE ON ATTACHED LEAFLET.**

**SHAKE WELL BEFORE USE.**

**PROTECT FROM FROST.**

Pack size: 5 Litres

**PROFESSIONAL USE ONLY**

**TRIPLE RINSE CONTAINER, PUNCTURE AND INVERT TO DRY**

**AT TIME OF USE**

®Trademark of the Dow Chemical Company ("Dow") or an affiliated company of Dow  
P002830901608

## **7. PLANT PROTECTION ON SPECIFIC AREAS WITHIN THE MUNICIPAL DISTRICT OF ENNIS**

### **7.1 Playing Pitches & Public Parks.**

Playing pitches are highly drained areas of grassland, many like those at Lees Road lying above the limestone pavement, the source of drinking water for the town and its environment.

As pitches are highly drained, it brings with it the risk that Nutrients and PRP's could leach into the groundwater. To reduce leaching of Nutrients and PPP's the following risk assessment has and continues to be undertaken.

- Only coated slow release fertiliser products are applied to the pitches
- Agricultural fertilisers are not used
- Control of Red Thread (*Laetisaria fuciformis*) a disease effecting Dwarf Perennial Ryegrasses is controlled using non chemical methods such as adjustment of Nutrient Status of the soils and the regular overseeding with Red Thread resistant Dwarf Perennial Ryegrasses.
- Control of Leatherjackets is achieved by the infrequent use of Chlorpyrifos (4%).
- No control of Casting Worms is permitted
- Control of broadleaved weeds including
  - Bellis Perennis – Daisy
  - Taraxacum spp – Dandelion
  - Cirsium spp – Thistles
  - Trifolium spp – Clovers
  - Stellaria spp – Chickweed

Chemical control is applied (to the Playing Surfaces only) using an amenity registered hormonal herbicide cocktail including 2-4D, MCPA & Dicamba at 5% recommended rate on an annual cycle. The reduced rate effective with precise timing of weed growth.

Applying PPP's on Pitches & Public Parks.

- Trained operators of equipment
- Correct low volume nozzles fitted to boom sprayers
- Windfoil fitted to booms of sprayer
- Correct fully protective clothing used by operator
- Spraying notices erected prominently throughout area to be sprayed
- Use of Pitches prohibited pre and post application of

- PPP's
- Apply PPP's during calm dry weather
- Safe cleaning out and disposal of empty chemical containers
- Safe cleaning out of spraying equipment.

## **7.2 Synthetic Pitches & Running Tracks.**

### **Herbicides.**

Seeds from grasses, weeds and trees blow onto synthetic surfaces. The seeds are contained between the leaves and germinate producing harmful seedlings which if left can penetrate into the backing of the carpet and cause long term damage.

### **Cultural Control.**

Pick out all seedlings by hand and dispose.

On a two to three year cycle bring in a professional maintenance contractor to lift the sand and rubber infill, clean it removing debris and re spreading the cleaned sand and rubber.

### **Chemical Control.**

Chemicals are available to control weed seedlings, however no chemical pesticides should be used on synthetic carpets unless recommended by the manufacturer and applied by their authorised agent. Use of random chemicals might harm the ultra violet lining on the carpet leaf filaments. Glyphosate is recommended by a number of the carpet manufacturers.

### **Fungicide Control.**

In periods of cold wet weather algae can attach themselves to the carpet leaf filaments. This causes retention of moisture and tends to flatten the leaf filaments. As for herbicides the carpet manufacturer's recommendation must be followed and their authorised agent should undertake the work. Mancozeb is recommended by a number of carpet manufacturers.

### **Insecticide Control.**

#### **CORAGEN ·**

##### **PCS No. 05295**

A suspension concentrate, containing 200 g/L chlorantraniliprole for use against chewing insects in agricultural and horticultural crops.

##### **PCS No 05295**

Version dated 17th March 2017

## **INSECT CONTROL**

CORAGEN is a Group 28 anthranilic insecticide used for the control of larvae of various Lepidopteran (caterpillar) and Coleopteran (beetle) species. Activity is by ingestion and contact. Paralysis of the pest occurs within a few hours of exposure and results in cessation of movement and feeding. Final control can take 2-4 days.

CORAGEN may be used as part of an Integrated Pest Management (IPM) program, which can include biological, cultural, and genetic practices, aimed at preventing economic pest damage. IPM principles and practices include field scouting or other detection methods, correct target pest identification, population monitoring, rotation of insecticides with different modes-of-action, and treating when target pest populations reach locally determined action thresholds. Consult your crop adviser to determine appropriate action treatment threshold levels for treating specific pest/crop or site systems in your area.

## **INSECT RESISTANCE**

Repeated and exclusive use of CORAGEN or other Insecticides may lead to the development of insect resistant populations. Maintaining the longevity of CORAGEN and all Group 28 products as an effective pest control tool for growers is critical, thus an insecticide resistance management (IRM) strategy should be established in the area of use. CORAGEN should be incorporated into Integrated Pest Management programs that include cultural and biological control practices in association with the IRM guidelines detailed below. Consult your local agricultural authorities or company representative for more details.

If resistance to this product develops in your area, this product and other products with a similar mode of action may not provide adequate control. Development of resistance can be avoided or delayed by alternating products having different modes of action.

The number of applications of CORAGEN is limited to 2 per season.

The following practices are recommended to prevent or delay the development of insecticide resistance to CORAGEN and to Group 28 insecticides:

- Apply CORAGEN or other Group 28 insecticides using a “window” approach to avoid exposure of consecutive insect pest generations to the same mode of action.
- A treatment “window” is defined as the period of residual activity provided by single, multiple, or sequence of product applications with the same mode of action, in an approximate 30 day period.
- Two successive applications of CORAGEN are acceptable if they are used to treat a single insect generation, but are not acceptable to control two consecutive pest generations.

Version dated 17th March 2017

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- Following a “window” of CORAGEN™ or other Group 28 insecticide, rotate to a “window” of applications of effective insecticides with a different mode of action.
- The total exposure period of all “Group 28-active windows” applied throughout the crop cycle (from sprouting/seedling to harvest) should not exceed 50% of the crop cycle.
- Avoid using less than labelled rates when applied alone or in tank mixtures.

For additional information on insect resistance monitoring, visit the Insecticide Resistance Action Committee (IRAC) on the web at <http://www.irc-online.org>

## **INTEGRATED PEST MANAGEMENT**

This product may be used as part of an IPM program, which can include biological, cultural, and genetic practices, aimed at preventing economic pest damage. IPM principles and practices include field monitoring or other detection methods, correct target pest identification, population monitoring, rotation of insecticides with different modes-of-action, and treating when target pest populations reach locally determined action thresholds. Consult your local

extension service, professional consultants or other qualified authorities to determine appropriate action treatment threshold levels for treating specific pest/crop or site systems in your area.

## **Herbicides.**

### **General.**

The vast areas of roads, streets, lanes, paths, leisure walking paths within the Municipal District of Ennis requires a multi disciplinary approach for the control of annual perennial weeds, tree seedlings, Buddleia seedlings, briars etc.

The major issue with using chemical herbicide is the danger of run-off of these chemicals into the water systems. This is particularly the case with impervious/semi impervious surfaces such as concrete. The ability to determine with any certainty when the next heavy shower of rain might occur further complicates the problem of run-off and timing of application.

### **Non Chemical control of Weeds.**

#### **Hoeing.**

The oldest method which is time consuming and very labour intensive, is also not effective for perennial weeds and perennial grasses.

#### **Pulling Individual Weeds.**

Time consuming and not effective as parts of perennial weeds and grasses remain and will again re shoot. Ragwort can be pulled by hand where it occurs in small numbers. Always wear gloves when pulling weeds.

### **Thermal Weed Control.**

Due to the perceived adverse effect of chemical herbicides and the added problem with resistance to these chemicals by weed species, there has been an active renewal of interest in research and development of Thermal Weed Control Methods. This method is not new and patents for various types go back as far as 1852.

Heat kills plants, there being a “Time-Temperature Relationship” which varies considerably between plant species and within the same plant type depending on its development stage i.e. a young soft plant requires less heat to kill than a mature more developed plant of the same kind.

### **Heat Delivery Systems.**

### **Weed Flame.**

Not applicable.

### **Flame Plus Infrared Radiation.**

Developed in Holland by Hoaf Infrared Technology and can clean roads, paths, open spaces, kerbs at up to 5,000 sq.m. per hour. The infrared radiation and hot air caused the protein in the weed to congeal. There is no information on its effect on macadam surfaces.

### **Hot Water.**

Originally developed in Australia and New Zealand and now commonly used in cities and towns in Holland and Germany. It is known as Wave Weed Control. Effectively controls algae, moss, weeds. It can also be used around trees. Is CO<sub>2</sub> neutral.

Produced by the Antea Group & Wave Weed Control.

### **Hot Water & Foam Insulator.**

A follow on from the above in addition the foam retains the heat within the weed for longer thus achieving a better kill.

All the above have a high capital procurement cost and all Irish Health & Safety Regulations must be sought.

## **7.4 Chemical Control of Annual & Perennial Weeds & Weed Grasses.**

In the short term chemical weed control continues to form the backbone in the Municipal District of Ennis. The number and types of chemical herbicides are now few and primarily divided between Systemic Glyphosate and Residual Diflufenican or a cocktail containing both.

Glyphosate comes in various concentrations from 360g/L to 480g/L. It is used to control emerging broadleaved weeds and weed grass. It is also recommended for a broad range of uses from paths with weeds to the treatment of invasive species.

### **Application Types.**

Knapsacks, Boom Sprayers and micro droplet methods either marginally diluted – ‘Nomix’ or no dilution.

### **Nomix.**

Micro droplet technology allows Glyphosate to be applied from a sealed pack on a micro droplet system which avoids drift of chemical.

Glyphosate and Sucfosulfuran (Mapp 13420, PCS 03080) together and in a 'Nomix' form to give contact and residual control of weeds. Although effective it is an expensive method but is suitable for the town centre. Sucfosulfuran is a residual herbicide.

### **Glyphosate plus Diflufenican (Commercial Name Pistol).**

Is a contact and residual herbicide which can be used in specific 'high value' sites but must be used carefully and in the correct weather conditions to avoid the chemicals entering the water system.

### **7.5 Gravel Paths & Walkways.**

Walkways within woods etc. Usually the walking process can keep weeds under control.

### **7.6 Leatherjackets, Wireworms and Frit Flies on Playing Pitches.**

Major damage, secondary damage, caused by crows and particularly rooks digging up larva.

### **Cultural Control.**

Periodic overseeding to ensure a strong sward with deep rooted grasses.

### **Non Chemical Control.**

Bird scarers.

### **Chemical Pesticide Control.**

Chlorpyrifos (48%) in the form of Dursban or Clinch at 1.5L/H.  
Number of applications per annum – 0.5 Number.

### **7.7 Other Grass Areas – Frequently Cut Areas.**

No nutrient or chemical P.P.P. used.

### **7.8 Other Grass Areas – Road Verges etc.**

Frequent cutting in particular to discourage the flowering of noxious weeds such as Ragwort (*Senecio jacobaea*). Noxious weeds including Ragwort (*Senecio jacobaea*), Thistle (*Cirsium* spp), Common Barberry (*Berberis vulgaris*), Male Wild Hop (*Hunulus lupulus*) and Spring Wild Oat (*Avena fatua*) are scheduled as noxious weeds under the Noxious Weeds Act 1936. "Any person responsible for land on which these weeds are growing is liable upon conviction to be fined. A person responsible for



land may be an owner, occupier, user or manager of the land. In the case of public roads, parks etc. Local Authorities have similar obligations”

The main culprit is Ragwort (*Senecio jacobaea*), seen on motorway verges and in unmanaged agricultural fields, flower heads bright golden yellow. A biennial plant in that it germinates and grows vegetatively in year 1 and flowers in year 2. A widespread weed, extremely poisonous to livestock, cattle and horses but not to sheep.

### **Cultural Control.**

Early cutting of grass areas to cut out the young Ragwort plants in their first year of growing cycle. Similarly to cut out second year plants prior to flowering. Cut out in October and again in February/March.

### **Chemical Control.**

An application of 2-4D. (500g/L) plus MCPA (500g/L). Apply at rosette stage, September/ October and March to May.

Difficult to control on road verges other than by early and numerous cuttings or by using a boom sprayer fitted with a Windfoil and follows NRA safety protocols. Use one or two booms in non peak traffic times with adequate signage. Small area of glowering Ragwort can be pulled by hand when soil is damp to aid pulling. Dispose of plant debris properly. Gloves should be worn when pulling Ragwort.

## **7.9 Graveyards/Cemeteries.**

Modern graveyards are laid out formally with a spine or spines for vehicular traffic and parallel concrete and/or macadam paths between double rows of graves. There are no special or restricted IMP's criteria with respect to graveyards.

Older graveyards such as the original Drumcliffe Cemetery was laid out around a Round Tower and Medieval Church with graves sited haphazardly with various types of memorial stones and a number with the memorial stones missing or never erected.

The maintenance of old cemeteries such as Drumcliffe is difficult because of its haphazard layout and in addition it is visited by many interested groups who visit Drumcliffe to study the round tower (remains), the medieval church and old grave monuments.

Due to the proximity to Ballyalla Lake extra care must be taken when using chemical PPP's at both old and new Drumcliffe Cemeteries. The excavations for each grave can enhance and quicken the entry into the groundwater of any liquid PPP applied in a graveyard/cemetery, therefore it is advised that alternative weed treatments of roads and paths should be considered including Hot Water Systems and that any chemical PPP's be confined to Nomix and Spot Treatment only.

Hormonal Herbicides such as 2-4D, MCPA, CMPP should not be used particularly in Drumcliffe which is close to the SAC and SPA.

## 8. NATURAL HERITAGE AREA (NHA)

Within the Municipal Area of Ennis are a number of diverse areas designated by the National Parks & Wildlife Service (N.P.W.S.) as

- Specified Areas of Conservation – S.A.C.  
and/or
- Special Protection Areas – S.P.A.

These areas are

- Ballyalla Lake S.A.C. 000014
- Ballyalla Lough S.P.A. 004041
- Newhall & Edenvale  
Complex S.A.C. 002091
- River Shannon &  
River Fergus Estuaries S.P.A. 004077

Included with Bally Lake is also Girroga Lake. Included with River Shannon & River Fergus Estuaries is Clarecastle Pier.

The S.A.C.'s are areas such as rivers, lakes, caves which must be treated as sensitive ecosystems which must be protected. S.P.A.'s are for the protection of wild birds, wild fowl, mammals, plants etc which have designated protection for these specific creatures and the S.P.A.'s may be within a S.A.C.

### **8.1. Weed Control within National Heritage Areas within the Municipal Area of Ennis.**

Improvement of agricultural lands adjoining and/or draining into N.H.A.'s in particular water bodies such as Ballyalla Lake and the River Fergus are one of the most serious causes of concern. This is because improvement of agricultural land means enhanced drainage and more intensive use of the improved lands which in turn adds to the deposit of sediments into the protected water bodies and enhanced leaching of nutrients into the water resulting in changes in the plant life and fish life within the water bodies.

### **8.2. Control of Weeds within Natural Heritage Areas.**

Prohibitions must be put in place for the use of Chemical Herbicides, Insecticides and Fungicides. The treatment of noxious weeds must be by non chemical methods or by spot applications of Glyphosate only. The treatment of non native invasive species must be by injection or sport treatment of Glyphosate only.

The use of Hormonal Herbicide should not be allowed with a buffer of 300M in place. The use of Mecoprop (CMPP) for the control of rushes on agricultural lands should not be allowed within a 300M buffer of a water body particularly on wet land.

# Council Pollinator Plan

WHO are our pollinators? While other insects play a role, most pollination on the island of Ireland is carried out by bees. We have one type (species) of managed honeybee and 97 different wild bees. That includes 20 bumblebee and 77 solitary bee species. Research shows that reliable pollination services depend not only on healthy honeybee populations, but also on an abundance and diversity of wild bees and other insect pollinators. WHAT do our pollinators need to survive? Just like us, pollinators need food and a safe place to live. Experts agree that inadequate nutrition is a major cause of 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, they need to be able to feed on pollen and nectar from a range of different flowers from MARCH through to OCTOBER. Spring is when hunger gaps are most likely to occur. It is important to prioritise increasing native plants (trees, shrubs, wildflowers) across the landscape to provide food for pollinators. Pollinators also need plenty of safe nesting habitats - long grass, bare earth, crevices in dry stone walls or wood - that are free from pesticides. WHY do we need to help our pollinators? Pollinators are important to farmers that grow pollinator dependent crops, to gardeners that want to grow their own fruits and vegetables and for the health of our environment. The annual value of pollinators is at least €53 million in the Republic of Ireland and £603 million in the UK. Furthermore, 78% of our wild plants require insect pollination. Without pollinators, these flowers would disappear, and our countryside would be a very different and less beautiful place. All-Ireland Pollinator Plan 2015-2020 One third of our 98 bee species are threatened with extinction from the island of Ireland. If we want them to be there to pollinate crops and wild plants for future generations we need to manage the landscape in a more pollinator friendly way and create a joined-up network of diverse and flower-rich habitats. The AllIreland Pollinator Plan 2015-2020 is supported by over 68 governmental and nongovernmental organisations who have pledged to deliver 81 actions to achieve this goal and make Ireland, North and South, more pollinator friendly.

[www.pollinators.ie](http://www.pollinators.ie)

H o n e y b e e

B u m b l e b e e

S o l i t a r y

Benefits to Councils in supporting the AllIreland Pollinator Plan

Councils can play a leading role in implementing the Plan by making their land more pollinator friendly. In the Republic of Ireland this will involve County and City Councils. In Northern Ireland it will involve Borough, District and City Councils.

To help pollinators we need to ensure that they have food, shelter and safety from chemicals such as pesticides. Many pollinator friendly actions simply require us to manage the land in a slightly different way than we have become used to. It is not about letting the landscape go wild, but about managing it in a way that is sustainable for pollinators so that they can survive and continue to provide us with their vital service.

Parks and open spaces can also play the important role of increasing connectivity between pollinator friendly sites in the wider countryside. It is not only Councils who are being asked to play a role. Guidelines targeting farmers, local community groups, gardeners, businesses, transport authorities and others are also being produced.

- Enhancing the local landscape for pollinators supports local food producers
- Making the landscape more pollinator friendly protects the ability of local people to grow their own fruits and vegetables
- Taking actions for pollinators will lead to general biodiversity enhancement
- Many actions identified

are either cost neutral or could lead to cost savings • Many actions can be supported by the wider community such as Tidy Towns, Ulster in Bloom, or by local or national NGOs. It may also involve working with Local Community Development Committees (LCDCs), Area Working Groups, Development Partnerships etc. to plan and implement actions. • Actions taken for pollinators can contribute to the Green Flag Award for parks under the sustainability, conservation and community involvement criteria. • Actions taken may also help local community groups e.g., in the Tidy Towns competition (ROI) or in Ulster in Bloom.

The All-Ireland Pollinator Plan is about everyone working together and contributing to making the landscape more pollinator friendly. An online mapping tool (Actions for Pollinators) has been developed to track each contribution. Where a Council is taking action to support pollinators, the system will ensure that those efforts are recognised.

3

Protect what you have The easiest and most important thing you can do is identify and protect existing areas that are already good for pollinators

Manage and restore seminatural habitats and their native plants

Identify and protect existing sources of food and shelter for pollinators on general council land

Alter the frequency of mowing Changing the frequency of mowing allows wildflowers (food) to flower among the longer grass. This is the most cost-effective way to provide food for pollinators

Identify at least 10 locations that are mown under a pollinator friendly regime (5 cut & lifts per year)

Aim to create at least 5 meadows (one cut & lift per year)

Identify at least 10 flagship roadside verges that are managed to be pollinator friendly (one cut & lift per year)

Introduce a layered mowing approach to other roadside verges

Pollinator friendly planting Take the actions below to ensure you have flowers blooming that can provide food for pollinators from March-October

Plant a native perennial wildflower meadow

Plant a native hedgerow

Replace grass with a dense clover sward

For future ornamental tree planting select from pollinator friendly species

A B C

Actions Councils can take to help pollinators - providing food, shelter and safety Please select some actions you could take and help us work together to protect pollinators

We know that each Council is different, so we have suggested a range of pollinator friendly actions to choose from. Step-by-step instructions on each action are provided.

4

Action 9 Meadow at Wyeth Nutritionals Ireland Ltd.

Key -Costs of each action range from zero/cost savings to most expensive -Effort required to carry out each action indicated by the number of spades -Our FAVOURITE actions are marked with a bee

Provide nesting habitats In addition to food, wild pollinators need safe places to live.

Manage hedgerows for pollinators

Bare earth/sand banks for wild pollinator nesting

Holes in wood or concrete for wild pollinator nesting

Install a bee hotel

Reduce use of pesticides Pesticides include insecticides, fungicides and herbicides, all of which can be harmful to pollinators.

Reduce or eliminate the use of pesticides (herbicides, insecticides & fungicides)

Adopt the pollinator friendly pesticide code

For new works ensure 75% of ornamental planting is pollinator friendly

In future ornamental maintenance planting try to select from the pollinator friendly planting code

Make some urban planters pollinator friendly

Make some urban roundabouts pollinator friendly

Pollinator friendly containers

Pollinator friendly roadside verge in NI - Don't Mow Let it Grow

Pollinator friendly roundabout

5

Raise awareness

Build actions on pollinators into existing frameworks and initiatives

Fund pollinator projects on council land to demonstrate best practise to other sectors (reference sites)

Put up signage to identify pollinator friendly habitats on council land

Promote & distribute pollinator friendly guidelines to other sectors locally

Tracking progress

Log your 'Actions for Pollinators' on the mapping system to ensure your efforts are recognised

Take part in the Bumblebee Monitoring Scheme to help track changes in wild pollinator numbers on council land

Promote & distribute the Junior Pollinator Plan to local schools

Facilitate or deliver training on pollinators and how to take action to protect them

Fund a special pollinator award in the Tidy Towns or Ulster in Bloom competition

Promote and get involved in other pollinator related initiatives

Raise awareness of pollinators in the local area

Actions Councils can take to help pollinators - other Please select some actions you could take and help us work together to protect pollinators

6

Seminatural grassland

Food & shelter

A. Identify and protect existing areas that are good for pollinators

Within council land there will already be some areas that are very good for pollinators and are acting as refuges in an otherwise inhospitable landscape. The most important thing you can do is to recognise and protect these. These may be semi-natural habitats, but they could also be areas within general council land.

Action Areas where it might apply Staff who could assist Action 1: Manage and restore semi-natural habitats and their native plants on council land

Ensure these are mapped and/ or audited so that they can be recognised and protected

Semi-natural habitats that fall under council land e.g., meadows, woodland, coastal sites, heathland etc.

Senior management

Action Areas where it might apply Staff who could assist Action 2: Identify and protect existing sources of food and shelter for pollinators on general council land

Ensure these are mapped and/ or audited so that they can be recognised and protected

• Flowering hedgerows (food & shelter) • Patches of wildflowers on disused ground (food) • Short grass meadows (food) • Small wild areas with bramble/ ivy (food) • Existing earth banks (shelter) • Dry stone walls (shelter) • Allotments

These areas can be very small. Signage could be used to identify these areas where appropriate. Heritage officers, biodiversity officers or others with this remit to identify areas and communicate as appropriate to other council staff

**Prioritise native plants** For pollinators, it is important to prioritise the management and restoration of native plants over ornamental varieties. An estimated 78% of our native flowering plants require insect pollination. In return, they provide those pollinators with food (nectar and pollen) throughout the year. This means those insects will be there when we need them to pollinate our crops. Increasing the number of native flowers and trees that occur on council land not only provides food for pollinators, it creates a colourful and dynamic landscape that is pleasant to live in or to visit.

**Use stock of local provenance** Often increasing or restoring native plants occurs through changes to site management. Although this is a slower process, it is cheaper and more sustainable as only plants that should naturally occur there will survive and thrive.

In areas where you can enhance native species by deliberate planting, it is important to use stock or seed of local provenance. This means that it is sourced locally and is adapted to the local climate and soil conditions. Many of our wild pollinators have evolved to emerge from hibernation in the short window when our native species are in flower. If you buy stock (e.g. Hawthorn) from central Europe there can be a three week difference in the flowering times compared to those sourced locally. Local provenance seed or stock may be more expensive, however the benefits greatly outweigh any additional initial costs.

**Info Box:** Wildflower seed bought from elsewhere (e.g., southern England) will not be adapted to our climate and soil conditions. It also creates a risk of genetic pollution to our native wildflower populations.

8

Native wildflowers

Trees & Shrubs Wildflowers

Blackthorn Bramble Broom Crab apple Elder Gorse Guelder Rose Hawthorn Hazel Honeysuckle Ivy Rowan Whitebeam Wild Cherry Wild Privet Wild Rose Willow

Bird's-foot-trefoil Bugle Cowslip Creeping buttercup Dandelion Germander speedwell Harebell Red clover Selfheal Tormentil White clover Wild Thyme

Agrimony Autumn hawkbit Cat's ear Creeping thistle Devil's Bit Scabious Field Scabious Goldenrod Knapweed Meadow buttercup Meadow Vetchling Ox-eye daisy Spear thistle Vetch Wild carrot Wild marjoram Yarrow Yellow rattle

Bluebell Brassica Dead nettles Foxglove Herb Robert Hogweed Lady's Bedstraw Lesser celandine Weld Ramsons Red campion Willowherb Woundworts Vetches Wild strawberry

Charlock Coltsfoot Deadnettle Forget me not Geranium Hawksbeard Mullein Mustard Poppy Red bartsia Speedwells Willowherb Vetch

Angelica Bisort Bogbean Crowfoot Cuckoo flower Meadowsweet Fleabane Purple Loosetrife Marsh marigold Mint Ragged Robin Valerian Willowherb Woundwort

Woodland, Hedgerow

Short grass meadows

Long grass meadows

Hedges, borders, woodland edge

Disturbed ground

Ponds, wetlands

Table: Examples of important native plants for pollinators

Other semi-natural habitats (heaths, dunes, bog) are also rich in plants and provide pollinators with a diverse diet.

9

The humble Dandelion is one of the most important food sources for pollinators in spring. We need to change our view of this unpopular wildflower and see them as a welcome splash of colour in spring.

Food B. Alter the frequency of mowing of grassy areas to allow more native plants to flower On areas of grass, changing the frequency of mowing allows common wildflowers such as Clovers, Knapweed and Bird's-foot-trefoil to naturally grow amongst the longer grass. This is the most costeffective way to provide food for pollinators and other insects. This is not a reduction in management effort, but a reallocation to provide additional benefits.

Consulting with the local community and keeping them informed of plans can allay fears that changed mowing regimes are due to lack of management. Signage can also be used to identify areas as deliberate.

Action Areas where it might apply Staff who could assist Action 3: Identify at least 10 locations that are mown under a pollinator friendly regime (5 cut and lifts per year)

Don't mow until 15th April and then cut on a 6 weekly rotation. Cuttings should be lifted.

These areas could be combined with pollinator friendly spring flowering bulb planting (e.g., Snowdrop, Crocus, Allium).

This regime keeps grass at a manageable level while increasing the growth of wildflowers as a food source for pollinators. Not cutting until mid-April allows Dandelions to flower but not set seed.

Dandelions are a vital food source for pollinators in spring. Cutting at the end of May and not again until mid-late July will increase the growth of important plants like Clover, Selfheal, Cuckooflower and Bird's-foot-trefoil.

• Parks • Roadside verges • Pavement verges • Greenways • Roundabouts • Off-road walking/cycle routes • Waterway towpaths • Housing estates • Old graveyards

These areas of species rich grass tend to be colourful and still look well managed

Signage can be used to identify these areas as deliberate

Facilities Manager

Roads Section: Area Engineer

Parks and Gardens

Heritage officers, biodiversity officers or others with this remit could assist in identifying suitable locations and advising on management

Note: These locations can be small areas, but the greater their size, the greater the benefit to pollinators. It is also worth considering connectivity when deciding on their location.

Info Box: On Council land many grassy areas are cut from mid-February on a 22 cuts per year cycle with the grass mulched back in. This may look tidy but it creates a sterile grassy desert for pollinators.

A cost equivalent action would be to move some areas to a pollinator friendly mowing regime (Action 10

An English and bilingual signage template is available for download from the website. The bilingual version is compliant with the regulations made under the Official Languages Act for use on public land in the Republic of Ireland. Space has been left on the template for councils to add their own logo before use.

Pavement verge cut on a 6-weekly rotation versus one with short grass: pollinator friendly mowing can provide food for pollinators where shortly mown grass does not.



Guidance for when mowing is contracted out: Identify at least ten locations and mow under a pollinator friendly regime - five cut and lifts per year. Mowing height should be set to 3 inches. • First cut after the 15th April (Dandelions are a vital food source for pollinators in spring) • Second cut at end of May • Third cut in mid-late July (maximises growth of Clovers and other wildflowers) • Fourth cut at the end August • Fifth cut after mid-October If necessary, this can be increased or decreased depending on the use of the area, but grass should not be cut from the beginning of March until mid-April or from the end of May until mid-July.

Info box: Mowing Regime Approximate costs per HA (2016) 22 Cuts per year, grass mulched back in €2,464.00+vat Cost inclusive of equipment, labour and fuel 5 Cuts per year with cuttings lifted €2,437.00+vat Cost inclusive of equipment, labour, fuel and waste disposal

Cost benefit analysis based on prices from a large landscaping company in ROI. Prices are based on flat ground accessible with ride on equipment and within a 40km radius of Dublin, rates would reduce for larger areas.

11

Meadow - Belfast City Council

Action Areas where it might apply Staff who could assist Action 4: Aim to create at least 5 meadows (one cut and lift per year)

Identify areas of grass that could be left uncut until late August-early September. One cut and lift per year.

Meadows managed in this way will allow wildflowers to bloom throughout the pollinator season and also provide undisturbed areas for nesting. The annual cut in September should be removed to reduce soil fertility over time. Over a number of years the meadow will naturally become more flower-rich with local species that are adapted to the site's conditions – all without spending money on wildflower seed.

Cutting paths through the middle or keeping a short border at the edge will demonstrate that these meadows are being managed and allow the public to enjoy the resource.

• Parks • Off-road walking/cycling routes • Greenways • Towpaths • Old graveyards • Housing estates

The creation of a long flowering meadow can be an excellent resource for pollinators but should be viewed as a long term action. The longer it is in place and managed to remove the final cut each year, the more flower-rich it will become and the more attractive it will be.

It may be more appropriate to place these in areas where it is obvious to the public that their creation is deliberate, with signage used to demonstrate this.

Facilities Manager

Roads Section: Area Engineer

Parks and Gardens

Heritage officers, biodiversity officers or others with this remit could assist in identifying suitable locations and advising on management

It may take a number of years before your meadow becomes less grassy and more flower-rich. It will gradually improve year upon year if the grass cut is lifted. In the early years pernicious weeds (e.g., Ragwort) should be removed. A number of resources are available on the Pollinator Plan website including: How-to-guide on creating and managing a wildflower meadow, How-to-guide on collecting and using local pollinator friendly wildflower seed to naturally improve meadows. This is something that local community groups or schools could get involved in.

4

12

Pollinator friendly roadside verge - Fingal

Action Areas where it might apply Staff who could assist Action 5: Identify at least 10 flagship roadside verges that are managed to be pollinator friendly (one cut and lift per year)

Identify areas that could be left uncut until late August-early September. One cut and lift per year. The annual cut should be removed to reduce soil fertility over time.

- Roadside verges

Councils are likely to have areas where the location and soil type lends itself to the creation of a wildflower rich roadside verge.

It is proposed these are used as flagship locations and identified using signage.

Roads Section: Area Engineer

Parks and Gardens (ROI)

Heritage officers, biodiversity officers or others with this remit could assist in identifying suitable locations and advising on management

Action Areas where it might apply Staff who could assist Action 6: Introduce a layered mowing approach to other verges

Identify areas where the edge of the roadside verge would be cut regularly with the strip behind mown less frequently. This allows a flower rich strip behind.

- Roadside verges

This approach can reduce the need for traffic management during mowing and is also pollinator friendly.

Roads Section: Area Engineer

Parks and Gardens (ROI)

Note: To get the most from this action, it is important that expert advice is sought on the location of these verges. They should be in areas that will quickly become wildflower rich and provide maximum reward for your efforts. If sites with very fertile soil are chosen it could initially lead to more rank grassy verges that will look less attractive in the short term.

For more information on managing roadside verges for biodiversity see Don't Mow Let it Grow <http://dontmowletitgrow.com>

Note: there will be areas where it is not appropriate to have long grass due to health and safety concerns about littering or dog fouling.

Actions 5 and 6 will only be relevant to Councils in ROI.

Ecoseeds: native perennial wildflower meadow

Food

C. Pollinator friendly planting Traditionally, ornamental planting in urban areas has not considered pollinators. Often flowers that are not good sources of pollen or nectar are planted and so do not provide food for bees and other insects. Future planting projects should incorporate some plants that will look similarly attractive but are also pollinator friendly.

Pollinators need food from early spring through to autumn - planting should try to ensure that there is a continual supply of food during this time. Spring and early summer are when hunger gaps are most likely to occur, making it particularly important to provide plants that will flower during these times.

Actions are listed here and suggested planting lists are provided in the Appendix (pollinator friendly planting code).

Action Areas where it might apply Staff who could assist Action 7: Plant a native perennial wildflower meadow

Identify areas where it may be possible to create a native perennial wildflower meadow using commercially purchased seed. In the short term, this would be more flower-rich than the meadow in Action 4, but it is also more costly and requires careful planning. Please be aware that some existing amenity grassland sites will be unsuited to the immediate creation of a high quality wildflower

meadow due to high soil fertility. Meadows should be cut once a year in late August-early September with the cuttings removed. The diversity of wild flowers in meadows increases if cuttings are removed to gradually reduce soil fertility.

• Parks • Roadside verges • Off-road walking/cycling routes • Greenways

This could be considered where areas have undergone other works as an alternative to normal reseeding

If wildflower meadows are being created along new roadside verges or greenways topsoil should not be applied

The creation of a wildflower meadow can be an excellent resource for pollinators but should be viewed as a long term action.

Heritage officers, biodiversity officers or others with this remit could assist in identifying suitable locations and advising on management

If you do have an appropriate site, it is very important to buy local provenance native wildflower seed that is pollinator friendly and suitable for your soil type.

Planting perennial wildflowers is much more cost effective and a better source of food for pollinators than continually planting annuals.

Green hay could be used as an alternative to buying seed. This is where a hay crop from a nearby species rich meadow is transported to the site and spread to distribute seeds.

Once your perennial meadow is established you should consider brush harvesting in September to collect the seed and use in other locations to save on future costs.

See website: How-to-guide on creating and managing a native wildflower meadow.

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Native wildflowers planted along Waterford Greenway

Action Areas where it might apply Staff who could assist Action 8: Plant a native hedgerow

Identify areas where it may be possible to plant a native hedgerow. Use stock of local provenance (sourced & grown locally).

Choose a selection of species from page 26 which suit your location. An ideal native hedge has 75% Hawthorn and 25% of at least four other species such as Willow, Blackthorn, Hazel, Holly, Dog rose, Whin and Guelder rose in a 30m length. It is best to plant between October and March, but not when the ground is waterlogged or frozen. Additional expert advice should be sought on planting and management.

• Parks • Roadside verges • Off-road walking/cycling routes • Greenways • New housing schemes

Roads Section: Area Engineer

Parks & Gardens

Heritage officers, biodiversity officers or others with this remit could assist in identifying suitable locations and advising on management

Action Areas where it might apply Staff who could assist Action 9: Replace improved grass with a dense clover sward

Identify areas where improved grass could be entirely replaced with a dense permanent clover mix.

Red and white clovers will provide colour, and are a very important food source for pollinators in summer. Grasses should be minimised in the clover mix planted as the clovers will fix Nitrogen and boost grass growth if seeds are present.

• Roundabouts • Off-road walking/cycle routes • Greenways

Could be adopted in areas that have undergone other works as an alternative to normal reseeding.

Not suitable for high use areas as it won't withstand heavy footfall.

Roads Section: Area Engineer

Housing Section

Parks & Gardens

8

9

Planting Yellow-rattle in meadows encourages other wildflower growth

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Pollinator friendly perennial planting

Action Areas where it might apply Staff who could assist Action 11: For new works ensure 75% of ornamental planting is pollinator friendly

For new works with ornamental planting adopt the pollinator friendly planting code and try to ensure that 75% of planting is with pollinator friendly species [list in appendix; along with advice on pollinator friendly perennial planting schemes].

• New council developments • Housing schemes • New roads or road realignments • New roundabouts

District Manager

Facilities Manager

Roads Section: Area Engineer

Parks & Gardens

Housing Section

Action Areas where it might apply Staff who could assist Action 12: In future ornamental maintenance planting try to select from the pollinator friendly planting code

Incorporate pollinator friendly shrubs, perennial plants or annuals into future planting programmes to provide food for pollinators from spring through to autumn [list in appendix].

• Parks • Housing estates • Sections of off-road walking/ cycle routes

District Manager

Roads Section: Area Engineer

Parks & Gardens

Housing Section

Action Areas where it might apply Staff who could assist Action 10: For future ornamental tree planting select from pollinator friendly species

Incorporate a mix of pollinator friendly trees that will flower from spring through to autumn [list of street trees and open space trees in Appendix]. These should be in line with Tree Management Strategies and wider planting policies.

Could be incorporated into future street and open space tree planting programmes

District Manager

Roads Section: Area Engineer

Planning

Parks & Gardens

Housing Section

Info Box: Tulips and Daffodils create attractive visual displays in spring but are not a good food source for pollinators. Where used, it is recommended they be combined with more pollinator friendly bulb planting (e.g., Snowdrop, Crocus, Muscari, )

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Pollinator friendly roundabouts

Action Areas where it might apply Staff who could assist Action 13: Make some urban planters pollinator friendly

Identify some urban planters where the standard annual bedding mix could be partly/fully replaced by perennial pollinator friendly plants [list in appendix].

- Urban planters • Areas of annual bedding

District Manager

Parks & Gardens

Potential partners: Local community groups, businesses

Action Areas where it might apply Staff who could assist Action 14: Make some urban roundabouts pollinator friendly

Identify some roundabouts that could be planted in a pollinator friendly way without impacting line of sight e.g., pollinator friendly mowing, replace grass with clover, bulb planting (Crocus, Alliums) or permanent pollinator friendly perennial plants in centre [list in appendix].

- Roundabouts District Manager

Roads Section: Area Engineer

Parks & Gardens

Potential partners: Local community groups, businesses

Info box: Pollinator friendly perennial planting versus annual bedding Planting regime Approximate costs per m<sup>2</sup> (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. Typical annual bedding costs were provided by a Council in ROI.

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14

Maynooth Tidy Towns - incorporating pollinator friendly perennials

17

Flowering hedgerow

Shelter D: Provide wild pollinator nesting habitat: hedgerows, earth banks and hotels Nesting habitat for wild bees (bumblebees and solitary bees) is unobtrusive and easy to create. Wild bees live in small colonies and are entirely focussed on finding enough pollen and nectar to feed themselves and their offspring. They are not aggressive, have no interest in interacting with humans, and do not present any risk to the public. Where nesting habitat is being created, it could be kept away from busy paths or playgrounds to further reduce any public concerns.

There are 20 different species of bumblebees in Ireland. They nest on the ground in long grass, often at the base of a hedgerow. We have 62 species (types) of solitary bees who are mining bees. They nest by burrowing into bare ground or south/east facing banks of bare earth (soil, sand, clay, peat). The remaining 15 solitary bee species are cavity nesting bees who nest in south facing stone walls, masonry, wooden structures or commercially available bee nest boxes.

Action Areas where it might apply Staff who could assist Action 15: Manage hedgerows for pollinators

Hedgerows provide both food and nesting areas for pollinators.

Flowering hedgerows that contain Willow, Blackthorn and Hawthorn provide vital food in spring when wild bees come out of hibernation. Bramble is a good source of food in summer, and Ivy in the autumn.

- Parks with existing hedgerows or areas where new hedgerows are to be created • Hedgerows along roadsides (where sightlines are not impacted)

Roads Section: Area Engineer

Parks & Gardens

Cut hedgerows every three years to encourage flowering. Avoid having all the hedges cut the same year, so that there is always some that will bloom and fruit in the area every year or cut one third of the hedge annually. The shape of the cut should be “A” shaped rather than the commonly observed low box shape.

Make sure the bases of hedgerows are not sprayed. This will allow flowering plants like Clovers, Vetches and Knapweed to provide additional food throughout the season and ensures nesting pollinators are safe.

Keep vegetation sparse on any sandy earth, or earth and stone banks e.g. by strimming, weeding, cutting, to provide nest sites for solitary bees. Do not spray areas where solitary bees are being encouraged to nest.

If vegetation beside and under hedgerows needs to be cut, do so between September and March to allow bumblebees to nest during the summer.

For additional information see website: How-to-guide on creating and managing hedgerows for pollinators

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Earth bank

Holes in wood

Info Box: Traditional management of hedgerows on public land is often not pollinator friendly. If council hedgerows are not in flower in April-May they are not good for pollinators and other wildlife.

Action Areas where it might apply Staff who could assist Action 16: Bare earth/sand banks for wild pollinator nesting

Using just a spade, you can create and maintain bare earth banks for mining solitary bees where natural ridges/banks occur. This is the best and most cost effective way to create nesting habitat for solitary bees. Once established, they should be maintained by manual scraping back to bare soil on an annual basis. Do not spray areas where solitary bees are being encouraged to nest.

• Coastal sites • Edges of tracks/lawns • Roadsides • Riverbanks • Natural ridges • Housing estates •

Parks

Solitary bees commonly only fly 100m from their nest to feed. It is important to create nest sites close to food sources.

Heritage officers, biodiversity officers or others with this remit to identify appropriate areas and encourage local community groups or relevant council staff to create/ manage.

Potential partners: Local community groups

Action Areas where it might apply Staff who could assist Action 17: Holes in wood or concrete for wild pollinator nesting

Where wooden or concrete fencing exists in public areas, consider drilling small south or east facing holes for cavity nesting solitary bees. These holes should be 10cm in depth and 4-8mm diameter. A range of different diameters is best. They are added once, ideally at a height of 1.5-2m (or as high as possible). Alternatively, drill holes in a pallet block and attach this to the fence post. Do not treat wood where cavity nesting solitary bees are being encouraged to nest.

• Any wooden fencing on council land • Community buildings

This action will be most effective if small numbers of holes are drilled in areas that are close to food sources.

Heritage officers, biodiversity officers or others with this remit to identify appropriate areas and encourage local community groups or relevant council staff to create/ manage.

Potential partners: Local community groups

Bee hotel

See website for a detailed How-to-guide on creating wild pollinator nesting habitat.

Action Areas where it might apply Staff who could assist Action 18: Bee hotels for wild pollinators  
Incorporate small numbers of solitary bee nest boxes into the local community for cavity nesting solitary bees. Bee hotels can be useful and are a good awareness raising tool, but actions 16 and 17 are preferable ways to create nest sites. A number of small hotels is better than one large one in terms of minimising the risks of disease and predators killing the bees.

- Any free common land where bee hotels could be kept (avoiding areas prone to vandalism) e.g., parks, allotments, schools

Bee hotels will only be used by bees if they are situated close to food sources.

Heritage officers, biodiversity officers or others with this remit to identify appropriate areas and encourage local community groups or relevant council staff to create/ manage.

Potential partners: Local community groups, schools etc.

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Reduce pesticide use

Safety E. Reduce the use of pesticides In some cases, the use of pesticides (insecticides, fungicides and herbicides) is necessary e.g., the use of herbicides along railway tracks to ensure the health and safety of train passengers. In other cases, we have fallen into a pattern of using them as a way of tidying or sanitising our environment. To minimise negative impacts on pollinators it is important that pesticides are used sustainably. This means they should only be used when necessary, and efforts should be made to minimise their impact on non-target species like bees. Pesticides should always be applied exactly according to manufacturer guidelines.

Action Areas where it might apply Staff who could assist Action 19: Reduce or eliminate the use of pesticides (herbicides, insecticides & fungicides)

Aim to eliminate the use of herbicide, fungicide and insecticide in some locations

- County Hall and Civic Centres • Council Offices • Libraries • Heath Centres (NI) • Community Centres • Leisure Centres • Graveyards • Green Flag Sites

Facilities manager

Roads Section: Area Engineer

Parks & Gardens

Identify sites where pesticide use could be reduced to 10% of previous planned maintenance spraying regimes

- Green Flag Sites Facilities manager

Parks & Gardens

Limit chemical control related to turf culture to only sports areas

- Across council land Facilities manager

Roads Section: Area Engineer

Parks & Gardens

For ornamental gardens (e.g., Rose Gardens) replace chemical pesticides and chemical fertilizers with organic products. Reduce fungicide use by using foliar feeds to make the plants more resistant

- Ornamental gardens Parks & Gardens

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Stoneybatter Resident's Campaign for a Chemical free Dublin. Other residents groups are establishing similar zones in their area.

For spot treating on hard surfaces, and spraying edges of paths adopt a policy of not spraying until the 15th April. This allows Dandelions and other wild plants to flower and provide a vital source of food in spring.

- Across council land Facilities manager

Roads Section: Area Engineer

Parks & Gardens

Eliminate the use of herbicides along south facing edging with bare soil to support solitary bee nesting

- South facing edging in parks, along pavements

Heritage officers, biodiversity officers or others with this remit to identify areas and communicate as appropriate to other council staff

Have spraying buffer zones around important pollinator habitat Signage should be used to identify these areas

- Across council land Heritage officers, biodiversity officers or others with this remit to identify areas and communicate as appropriate to other council staff

Identify if there are streets/areas where community groups are willing to take responsibility for manual weed control

- Appropriate residential areas Heritage officers, biodiversity officers or others with this remit to identify areas/groups.

Outreach Department

Partners: Local community groups

Action Areas where it might apply Staff who could assist Action 20: Ensure best practise where the use of pesticides cannot be avoided

Adopt the All-Ireland Pollinator Plan pesticide best practice code and communicate to relevant staff

One page pesticide code provided in Appendix. This could be laminated and provided to staff vehicles.

- Across council land. District Manager

Facilities Manager

Roads Section: Area Engineer

Parks & Gardens

Housing Section Info Box: On Council land, herbicides are having the greatest negative impact on pollinators. Pollinators need a range of flowers to feed on from spring through to autumn. The overuse of herbicides is making it very difficult for them to find enough food to survive in our landscape.

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Pollinator workshop

F. Raise public awareness of pollinators within the local area For the All-Ireland Pollinator Plan 2015-2020 to be successful we need to raise public awareness so that people know the importance of pollinators and understand why we all need to take action. Councils can play a leading role through their influencing power and ability to reach elected representatives and rate payers.

Action Areas where it might apply Staff who could assist Action 21: Build actions on pollinators into existing frameworks and initiatives • City, County or Local Development Plans • Sustainability criteria of the Green Flag Award Scheme (parks) • Green Infrastructure strategies • Climate adaptation plans Senior management Heritage officers, biodiversity officers or others with this remit to suggest incorporation where appropriate



Action Areas where it might apply Staff who could assist Action 22: Fund pollinator projects on council land to demonstrate best practice to other sectors

Fund the creation of best practice pollinator habitat on council land. These can be used as case studies and reference sites to other sectors

- Across council land Senior management

Heritage officers, biodiversity officers or others with this remit to coordinate

Action Areas where it might apply Staff who could assist Action 23: Put up signage to identify pollinator friendly habitats on council land

Put up signage explaining the importance of pollinators and what is being done on council land to support the All-Ireland Pollinator Plan.

- Across council land Heritage officers, biodiversity officers or others with this remit

An English and bilingual signage template is available for download from the website. The bilingual version meets the language criteria for use on public land in the Republic of Ireland. Space has been left for the inclusion of council logos

See website to download the Junior Pollinator Plan (Action 25).

Action Areas where it might apply Staff who could assist Action 25: Promote & distribute the Junior Pollinator Plan to local schools

The Junior Plan is a child friendly version of the original Plan and has actions for schools

- Local schools and youth groups • Libraries • Education Centres

Heritage officers, biodiversity officers or others with this remit

Action Areas where it might apply Staff who could assist Action 24: Promote & distribute pollinator friendly guidelines to other sectors

Parallel guidelines are available on actions local communities, gardeners, farmers & businesses can take to help pollinators. These could be promoted where appropriate. See the Pollinator Plan website for high resolution, printready PDFs of these guidelines.

- Local community groups • Council events • Libraries

Heritage officers, biodiversity officers or others with this remit to fund print runs of guidelines for distribution

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Action Areas where it might apply Staff who could assist Action 28: Promote and get involved in other pollinator related initiatives • See website for list of existing projects e.g., Save our Magnificent Meadows, Grow Wild, Don't Mow, Let it Grow, Bee-Licious, Bi Heritage officers, biodiversity officers or others with this remit

Action Areas where it might apply Staff who could assist Action 27: Fund a special pollinator award in the Tidy Towns or Ulster in Bloom competition

Sponsor an award that recognises the town that has made most efforts to make their local area more pollinator friendly

- Tidy Towns and Ulster in Bloom competitions

Heritage and Biodiversity Officers across Councils could come together to collectively sponsor the award.

Action Areas where it might apply Staff who could assist Action 26: Facilitate or deliver training on pollinators and how to take action to protect them

Resources provided through the All-Ireland Pollinator Plan website

- Council staff • Local community groups

Heritage officers, biodiversity officers or others with this remit to organise

Pollinator friendly mowingG. Tracking progress and recognition for efforts Progress in the implementation of the All-Ireland Pollinator Plan 2015-2020 will be carefully tracked. Success is not measured in having the Plan, but by knowing that it is working. A publicly available online mapping system will track existing and new pollinator friendly actions taken around the country and provide recognition to those who are helping.

The All-Ireland Bumblebee Monitoring Scheme is a citizen science initiative managed by the National Biodiversity Data Centre. It will be used to track changes in wild pollinators as the Plan is implemented.

Action Areas where it might apply Staff who could assist Action 29: Log your existing and new 'Actions for Pollinators' on the mapping system to ensure your efforts are recognised

A publicly available online mapping system will allow all those who take pollinator friendly actions to log their location and the action(s) taken. This will track the build-up of food, shelter and safety for pollinators in the landscape. It is hoped councils will use the system to log what they are doing and show the restoration and creation of pollinator resources in their area. Once established, the system will help coordinate efforts locally between councils, community groups, schools etc.

[pollinators.biodiversityireland.ie](http://pollinators.biodiversityireland.ie)

- All actions taken on council land can be logged and recognised

Heritage officers, biodiversity officers & other staff as relevant

GIS staff

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Action Areas where it might apply Staff who could assist Action 30: Take part in the Bumblebee Monitoring Scheme

Identify interested people and set up at least one bumblebee monitoring scheme walk within key sites. In this scheme volunteers walk a fixed 1-2km route once a month between March and October and record the diversity and abundance of bumblebees that they see. The scheme is run by the National Biodiversity Data Centre who provide full support and training. The scheme is vital in tracking what is happening with wild pollinators in the landscape, and can be used to assess the effectiveness of any pollinator friendly actions that are being taken locally. Email [info@biodiversityireland.ie](mailto:info@biodiversityireland.ie) for more information

- Across council land Coordinated by Heritage officers, biodiversity officers or others with this remit – could be in collaboration with other council staff or through local community groups

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Appendix Pollinator friendly planting code

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.

W i l l o w

D a n d e l i o n

C l o v e r

K n a p w e e d

B r a m b l e

I v y

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.

Spring Autumn

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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 34.

- 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.

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Species Flowering

Horse Chestnut *Aesculus hippocastanum*

White flowers May-June

Juneberry *Amelanchier* species (not *A. lamarckii* which may be invasive)

White flowers April

Indian bean tree *Catalpa bignonioides*

White flowers May - July

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.

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. 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 × europaea*, *T. platyphyllos*). Those suggested below are smaller and don't attract aphids, therefore producing no dripping.

Species Flowering

Juneberry Tree *Amelanchier x grandiflora* 'Robin Hill'

Small white flower April. Good autumn colour

Upright Hawthorn *Crataegus monogyna* 'Stricta'

White flowers May

Pillar crab *Malus tschonoskii*

Scented white flowers May. Can set fruit.

Callery pear *Pyrus calleryana* 'Chanticleer'

White flowers April-May. Can set fruit.

Rowan *Sorbus acuparia* varieties

White flowers May-June

Lime: *Tilia cordata* 'Greenspire'; *Tilia x europaea* 'Euchlora' Pale yellow flowers June-July

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Hawthorn *Crataegus* species

White flowers May – June

Apple *Malus* species/cultivars

White, pink, red flowers May

Foxglove tree *Paulownia tomentosa*

Lavender blue flowers May

Wild Cherry *Prunus avium*

White flowers April

Bird Cherry *Prunus padus*

White flowers April

Japanese flowering cherry *Prunus serrulata* '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 *Pyrus* species and cultivars

White flowers May

Rowan *Sorbus* 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:

*Salix aegyptiaca* (early spring flowering) *Salix alba* (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

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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](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 (this is 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 × *Fatsia* *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)

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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* 'Kojo-no-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)

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*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* (Goat's beard, male form only) *Asparagus officinalis* (Common asparagus) *Astrantia major* (Greater masterwort) *Bupthalmum 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* (Eupatorium 'Purple Bush') *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)

*Liatrix spicata* (Button snakeroot) *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
- Provides a natural style of planting
- Provides habitat and nesting materials for birds and insects

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

Costing: Pollinator friendly perennial planting versus annual bedding Planting regime Approximate costs per m<sup>2</sup> (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. Typical annual bedding costs were provided by a Council in ROI.

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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.

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

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

Option A Little Experience with Perennials Flowering

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

Option B Some Experience with Perennials Flowering

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

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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. Perennial planting schemes can be underplanted with spring bulbs to provide early food for bees  
Crocus Pollinator Snowdrop Pollinator Muscari Pollinator Bluebells - native Pollinator Stipa arundinacea Grass

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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.

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Food for pollinators

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 are having a much greater negative impact on pollinators because they are 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.

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About the National Biodiversity Data Centre The National Biodiversity Data Centre is a national organisation that collects and manages data to document Ireland's wildlife resource, and to track how it is changing.

Find out what biodiversity has already been recorded in your local area: [maps.biodiversityireland.ie](http://maps.biodiversityireland.ie)

Help us to build up the knowledge of biodiversity in your local area by submitting sightings to [records.biodiversityireland.ie](http://records.biodiversityireland.ie)

Text: Úna FitzPatrick & Erin Jo Tiedeken (National Biodiversity Data Centre), Niamh Lennon (Wexford County Council), Orla Maguire (Belfast City Council) & Melina Quinn (Northern Ireland Environment Agency) Thanks to Peter Cuthbert, Bernie Guest, Eoin Dullea, Rosaleen Dwyer, Dearbhala Ledwidge, Shane Casey, Catherine Casey, Amanda Pedlow, Ruth Wilson, Gerry Clabby, Una Mc Dermott, Mary Montaut, Aoibhinn Corrigan & Jane Stout for input. Design: Vitamin Studio, Waterford

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## 9. PPPs STORAGE REQUIREMENTS

The Municipal District of Ennis by its existing working methods and as the majority of operations using PPP's within the district are carried out by Specialist Contractors the Storage Requirements by the Authority are minor, confined to herbicides such as Glyphosate Nomix Solutions, Slug Pellets and Residual Herbicides. The requirement for the storage of the above PPP's are:-

### **9.1 PPP's Storage – Chemical Cabinets or Cages.**

- Cabinets must meet certain design and construction standards
- Cabinets or Cages must be within a Bund which can hold 120% of the capacity of the storage.
- Bund made for impermeable material, free of cracks and should be resistant to chemical attack.
- Cabinet or Cage must have external signage such as "Pest Store, Authorised Staff Only, No Smoking. In case of accident dial 999/112".
- Chemical cabinets or cages must not be in Domestic Buildings, Staff Rooms, Offices or areas where food or feed is stored or processed and must be secure or in a secured area.

### **9.2 Records Requirements.**

#### Inwards (Purchases).

Supplier Name and Address

Name of Product

P.C.S. No. of Product

Pack Size

Quantity Purchased

Date

Batch

Signed & Dated.

#### Outwards (User).

Name of Product

P.C.S. No. of Product

Amount taken

Amount Returned if Any

#### Outwards (User) Contd.

Pack Size

Where Used

Equipment Used

Disposal of Empty Packs

Signed & Dated.

Refer to Signage & Record Keeping Requirements for End User of Professional Plant Protection Product Issued P.C.S. January 2014.

## **10. HEALTH & SAFETY REQUIREMENTS**

It is necessary that the requirements of the following Health & Safety Documentation are complied with when using chemicals and mechanical devices when controlling weeds, noxious weeds, invasive species etc.

Safety, Health & Welfare at Work Act 2005.

Safety Health & Welfare at Work Act (Construction) Regulations 2006.

Traffic Signs Manual – Chapter 8.

Guidance for the Control & Management of Traffic at Road Works.

Safety, Health & Welfare at Work (General Applications) Regulations 2007.

Safety Health & Welfare at Work (Chemical Agents) Regulations 2001.

## 11. CONCLUSIONS

Health and Environmental concerns have highlighted the part played by Chemical Plant Protection products in harming Groundwater, River Water and Lake Water. The use of chemical plant protection products on food crops to control pests and diseases has had a serious knock-on effect in that traces of these PPP's are sometimes found in the food end product.

Due to the above concerns the type and number of chemical PPP's has dramatically reduced and it is expected that their numbers and types will continue to reduce when/if further evidence is found of them having harmful side effects.

The Local Authority (Clare County Council) controlling the Municipal District of Ennis do not grow food crops however it does use chemical PPP's primarily to control weeds on numerous diverse and various elements within its responsibility.

While the number and types of chemical PPP's used by the Municipal District of Ennis are significantly lower in number than those used in agriculture and the range and types are also less, there is an onus on the Management of the Municipal District of Ennis, due to the fact that it is a highly populated district and being a district which has within its boundaries sensitive habitats and ecosystems, it is necessary to limit the volumes of chemical PPP's and it is essential that their use should be confined to those with current PCS Licences and if at all possible be labelled for Amenity Use.

Expectations of residents and resident organisations such as the 'Tidy Towns Committee' can be very difficult to meet as they expect weed free roads, paths, streets, car parks etc. and unless the Management of Clare County Council take alternative actions in relation to weed control it will be very difficult to meet the 'Tidy Town's' concept.

A compromise is necessary in the near future to aid the Management of the Municipal District of Ennis to achieve their requirements and at the same time for resident's organisations to meet the standards set by the Tidy Towns National Specifications. This compromise might require the Tidy Towns National Specifications to adjust their meaning of 'Tidy' to a more sustainable type of 'Tidy' where marks are achieved when the volumes and types of chemical PPP's are reduced and/or where Biodiversity is enhanced and where Non Native Invasive Species are controlled in managed systems.

The Management of the Municipal District of Ennis must also begin immediate research in the development of non chemical weed control and must look at systems such as Hot Water and flame control. At present Glyphosate products forms the back bone of the weed control programme of the Municipal District of Ennis. There is no guarantee that Glyphosate products will be available into the future, therefore it is vital to research non chemical control alternatives.

## **12. SUMMARY**

### **Playing Pitches:**

Continue with the current arrangement as outlined.

### **Paths and Roads:**

Current Practice: Three treatments of Glyphosate per season. By specialist contract.

Continue with this arrangement.

### **Graveyards: and areas along the lake the rivers and the estuary,**

The objective here should be to adopt a non chemical method such as hot water. In the interim spot treatment with Nomix glyphosate should be used.

### **National Heritage Areas:**

No chemical herbicides, insecticides or fungicides to be used. Non Chemical methods to be used.

Possible Exceptions:

Noxious Weeds: Spot applications of Glyphosate.

Invasive Species: Spot applications of Glyphosate

### **Town Centre Areas:**

Current Practice: Specialist contractor sprays three times per year with glyphosate and the council operatives spot spray with Nomix Duel.

Change Nomix Duel to Nomix Blade and peruse non chemical methods such as hot water.

### **Storage:**

Store all PPP as per Par. 9.1.

### **Records:**

Maintain records as per Par. 9.2.

### **National Action Plan:**

Adopting the principals and objectives of the NAP should form the basis of any strategy for the Sustainable use of Plant Protection Products in the Municipal District.

## **APPENDICES**



