IForUT Environmental and Social Risk Assessment (ESRA) - Glyphosate

Date	16th April 2020	Last Review Date: 26th June 2026	
Country	Ireland		
Proposed chemical pesticide[1]	Glyphosate	**Purpose of use (protection of vegetation, logs, human health, livestock, native species, seeds or seedlings, weed control, others)**	Weed Control

ESRA Summary for Glyphosate

Glyphosate is the active ingredient in many weed control products approved in Ireland for forestry. In the products used in forestry, Glyphosate is for professional use only.

This ESRA has been prepared and designed to assist IForUT in the Risk Assessment of the active ingredient Glyphosate where its use is proposed within their portfolio.

Glyphosate is classified as a restricted Highly Hazardous Pesticide (HHP) under FSC pesticide policy and its use must be justified, controlled and monitored in accordance with FSC requirements.

Where the decision making process has identified justifiable use of chemical weed control in a particular forestry operation, glyphosate can be used safely where appropriate mitigating measures are applied and all regulatory and FSC requirements are met, such as:

- adhering to industry best practice and health & safety regulations
- using trained operators
- following the instructions on the product label
- use of Personal Protective Equipment (PPE)
- observing buffer zones in aquatic and sensitive areas in adherence with DAFM environmental guidelines and requirements
- using only the minimum effective quantities of active ingredient required
- using targeted applications (spot applications)
- suitable weather conditions
- and warning the public of areas where this active ingredient has been sprayed.

Glyphosate is currently approved in the EU until 15 December 2033[2]. The use of products containing Glyphosate approved in Ireland for forestry is subject to compliance with PRCD requirements and product label instructions. Product approval and PCS numbers must be verified against the PRCD database at the time of use. Care should be taken to minimise the risk of surface water contamination. From 2024 onwards, all PRCD-approved products containing glyphosate carry the environmental risk pictogram.

It is IForUT Policy to adhere to industry best practice and health & safety regulations **as detailed in its Integrated Pest Management Strategy (IPMS) and associated policy and procedural documents and operation contracts**, see also Section 4 Guidance Note at the end of this ESRA

[1] The term 'pesticides' is commonly used as a synonym for plant protection products

[2] EFSA produced a fact sheet on Glyphosate - https://www.efsa.europa.eu/sites/default/files/2023-07/glyphosate_factsheet.pdf

Background Information

Regulation

In Ireland pesticides are regulated by the Pesticide Registration & Controls Division (PRCD), formerly Pesticide Control Services (PCS), of the Department of Agriculture, Food and the Marine (DAFM). http://www.pcs.agriculture.gov.ie/

The Pesticide Registration & Controls Division (PRCD) is responsible for implementing the regulatory system for plant protection and biocidal products. PRCD is also responsible for the national regulations controlling pesticide use. All of their regulatory work is based on scientific evidence to ensure that controls on the sale, supply and use of pesticides are effective.

As part of this ESRA the labeling and Material Safety Datasheets (MSDS) for the most widely used products approved by the PRCD containing Glyphosate, were reviewed as well as the Environmental Information Sheets (EIS) where available.

The MSDS is used to communicate information vital to the safe use and handling of each chemical or product. MSDS provide information on hazardous ingredients, physical and chemical properties, accompanying hazards, primary routes of entry, exposure limits, precautions for safe handling and use, emergency first aid procedures, and responsible party contacts. Most pesticide manufacturers also elect to include on the MSDS additional information which may be useful to those handling the material along the supply chain.

Pesticide labels provide specific directions and precautions and safety instructions directed to the end user. Specific wording is required and must be approved by PRCD on all pesticide labels.
All approved pesticides are assigned a PCS number, which can be found on the PRCD website and on the product label. Approval status and conditions of use must be verified against the PRCD database prior to use.

The Signal words 'Warning' or 'Danger' are used to warn the user that the chemical is hazardous to human health. Where one of these signal words is used, it is generally accompanied by the following pictogram:



This pictogram means one or more of the following:

- Acutely toxic (harmful)
- Causes skin sensitisation, skin and eye irritation
- Respiratory irritant
- Narcotic, causes drowsiness or dizziness
- Hazardous to the ozone layer

Where particular active ingredients are harmful to the environment, this is generally indicated by the following pictogram:



This pictogram warns that a substance is hazardous to the environment and causes aquatic toxicity.

Weed Control
Trees generally only require weed control in the establishment phase when the trees are very small. The competition from weeds generally only lasts for 2-3 growing seasons by which time the plants have generally grown above the vegetation. Until such time some form of vegetation control is usually necessary on most sites and this is either carried out manually or it may require the use of chemical herbicides. In many cases manual weed control is the preferred method used in forestry.

Invasive Species Control
The control of invasive species is mandatory for certified forests. For some invasive species, such as Himalayan Balsam (*Impatiens glandulifera*), Giant hogweed (*Heracleum mantegazzianum*), Giant rhubarb (*Gunnera tinctorial*) and Rhododendron (Rhododendron ponticum) some form of manual control may be possible where the invasion is at an early stage. In the case of the control of other invasive species, such as Japanese Knotweed (*Fallopia japonica*), the use of chemicals may be the only viable option.

Glyphosate

The active ingredient Glyphosate is commonly used in forestry for weed control, including the control of Japanese Knotweed. There are a range of herbicide products for use in forestry that contain Glyphosate. Glyphosate used in forestry operations is for professional use only.

Glyphosate is the most widely used herbicide in forestry for several reasons.

- It is effective. Glyphosate is a systemic (translocated) herbicide that moves from the treated foliage to other plant parts, including the roots. In this way, glyphosate kills annual and perennial weeds.
- It is non-selective, meaning that it can be used to control most weeds – grasses, sedges and broadleaved weeds.
- It has little or no soil residual. It is rapidly bound by clay particles in the soil rendering it inactive.
- It is relatively inexpensive – compared to other herbicides.
- It is considered by the European Food Safety Authority (EFSA) to present an acceptable level of risk when used in accordance with approved conditions.

Glyphosate and its salts were originally added as ‘Restricted’ in the FSC® Lists of highly hazardous pesticides (FSC-POL-30-001a EN) (May 2019) on the basis that the International Agency for Research on Cancer (IARC) has given Glyphosate a classification of ‘Category 2A: probably carcinogenic’ (March 2015). The classification remains in the (Feb 2024) updated version, even though this classification is disputed.
On 15 March 2017, the Risk Assessment Committee (RAC) of the European Chemicals Agency concluded by consensus that:

- There is no evidence to link glyphosate to cancer in humans, based on the available information
- Glyphosate should not be classified as a substance that causes genetic damage (mutagen) or disrupts reproduction. (ECHA carried out Hazard Assessment in 2022 that concluded same.)

The same conclusion was also reached by the following organisations:

- European Food Safety Authority (EFSA), supported by experts from 27 EU Member State competent authorities (as also outlined in their Fact Sheet)
- National authorities outside the EU (e.g. Canada, Japan, Australia, New Zealand)
- Joint Food and Agriculture Organization of the United Nations – World Health Organisation Meeting on Pesticide Residues (JMPR)

The International Agency for Research on Cancer remains, therefore, the only agency with a divergent view.

The EU's current approval for Glyphosate remains in place until 15 December 2033.

Under the new FSC Pesticide Policy an environmental and social risk assessment (ESRA) has to be undertaken before using a FSC restricted or highly restricted pesticides.

Following a desk study of labels for products containing Glyphosate approved by PRCD for use in forestry in Ireland, information on products approved by PRCD for forestry use was reviewed as part of this ESRA for potential use in IForUT forests.

When used in spot applications and in accordance with the product guidelines as described on the product label and in the Material Safety Datasheet, Glyphosate, in the products approved by PRCD for use in forestry, is not expected to pose a significant risk to the professional operator, the public or the environment when applied in accordance with product label instructions and best practice.

However, it is critical when using chemicals to have proper procedures in place to ensure that health & safety standards are being met and best practice is being observed when handling chemicals and also that DAFM environmental and water guidelines are being adhered to. IForUT have robust procedures in place which address best practice in this regard including forest management and policy documents, Environmental Impact Assessments and other procedural documents, including this ESRA.

Dose of Active Ingredients used

In general the amount of chemicals used in forestry is very low and would represent only a small fraction of the amounts used in other sectors.

Prior to 2024, most of the PRCD approved products for forestry containing Glyphosate, contain 360 g/l of active ingredient and allowed a maximum dose of 10 liter per Ha per annum either as a single dose or as two separate applications of 5 liter per Ha, depending on the product. From 2024 onwards the max dose per application has been reduced on all labels and the max number of applications per annum has been removed.

Some products contain a higher amount of active ingredient (450, 490, 540, 590 and one product cites 720 g/l) and recommend corresponding lower maximum doses per Ha, as specified on product labels.

Maximum application rates for each product vary per weed and situation and the product label information should be consulted for application rate details. The dosage of active ingredient per Hectare used in forestry for spot applications is generally much lower than the maximum allowable dosage quoted by the manufacturer.

Weather conditions

The application of chemicals is subject to weather conditions being suitable to this operation to avoid drift.

Spraying must not be undertaken in conditions that may result in spray drift, including windy conditions and for most products containing Glyphosate a period of 6 – 24 hrs without rain following spraying is specified on the product label. Glyphosate should not be used during a period of frost.

The DAFM /Teagasc / EPA publication 'Protecting Drinking Water from Pesticides - Advice for Farmers and Other Professional Users' generic recommendation for pesticide spraying is that no spraying is undertaken if the target area is wet or if heavy rain is forecast within 48 hours after application.

IForUT Policy

IForUT is committed to sustainably managing their forest resource and only subscribe to chemical use as a last resort.

It is IForUT policy to:

- Assess each site on an individual needs basis and have a clear rationale to justify chemical usage as opposed to non-chemical alternatives.
- When chemical control is deemed necessary, only use chemicals approved for use in forestry in Ireland by the DAFM's Pesticide Registration and Control Division (PRCD)
- When chemical control is deemed necessary, comply with the FSC® Pesticide Policy.
- Record usage and monitor effectiveness of chemical applications.
- Comply with statutory legislation on health & safety and environmental and water protection.
- Only use operators who are fully trained in safe handling and use of chemical pesticides, health and safety and environmental aspects of the use of chemicals.
- Reduce chemical usage as a long-term goal.
- Continue to investigate and review non-chemical alternative weed control methods, as part of IForUT's commitment to sustainable management of their forest estate.
- Employ mitigating measures as outlined in this ESRA and in its Integrated Pest Management Strategy (IPMS) and associated policy and procedural documents and operation contracts.
- Keep records of all site visits to monitor/supervise operations.

IForUT's Pesticide Usage Policy describes the **Non Pesticide Strategy** employed as follows: In many cases it has been found to be more cost effective to use non pesticide controls such as road flailing as opposed to spraying. The need for weed control is currently very limited due to poor weed growth due to soil types and climatic conditions found on most upland sites. In most cases manual control is preferred due to the risk of over spray.

The IForUT Integrated Pest Management Strategy (IPMS) also outlines its strategy in this regard and outlines steps that will be undertaken in first instance to prevent any unnecessary action to be undertaken, to identify and monitor pests to ascertain whether any action will have to be undertaken and to identify whether alternatives such as mechanical or biological methods can be used.

It is IForUT policy to always manually apply chemicals carefully and directly to the targeted weed (spot application). Buffer zones (setbacks) are strictly observed and no chemicals are applied near watercourses or abstraction points for public or private water supplies, or other sensitive natural features.

It is IForUT policy to erect notices in the forest area, prior to the application of chemicals, to inform the public where and when chemicals are being sprayed.

Waste Management

The product labels for pesticide products contain information for the disposal of empty containers including triple rinsing containers and not re-using empty product containers. The IForUT waste policy with recommendations for responsible waste management in accordance with EPA and PRCD[4] guidelines is included in its IPMS and associated policy and procedural documents and operation contracts. Disposal of empty containers through a registered waste disposal service[5] is recommended. All spent oil, machine parts and refuse generated by the operation should also be removed from site after forestry operation has ceased.

[4] Good Practice Guide for Empty Pesticide Containers https://www.pcs.agriculture.gov.ie/media/pesticides/content/sud/Good_Practice_Guide_for_empty_pesticide_containers.pdf

[5] Example of farm plastics recycling facility: https://www.farmplastics.ie/

ESRA – Environmental and Social Risk Assessment

This ESRA takes into account the potential risk of Glyphosate to:

1. Worker Health & Safety
2. The Environment
3. Social risk and the wider public

and outlines mitigating measures to be undertaken.

1. Worker Health & Safety

While Glyphosate, in the products and dosage generally used in forestry is not classified as dangerous, to avoid risks to human health, the operator must comply with the instructions for use on the product label and recommended for use of any chemical:

- Care should be taken when handling.
- Contact with skin and eyes should be avoided
- The use of protective clothing is mandatory.
- Care should be taken not to breathe spray.
- Workers should not eat, drink or smoke while working with chemicals.
- Chemicals should be kept away from foodstuffs and beverages.
- All protective clothing should be washed thoroughly after use, especially the insides of gloves.
- Hands and exposed skin should be washed thoroughly before eating and drinking/smoking/after work.
- Chemicals should be kept away from children
- Chemicals should be kept only in the original container

The above precautions should be universally applied when using chemicals and it is assumed that trained operators are aware of these precautions. (See also FISA Safety Guide 202 'Application of pesticides by hand-held equipment')

Contractors will be expected to follow the instructions on the pesticide product label including those related to Personal Protective Equipment (PPE), application rates and equipment suitability in addition to all IForUT policies, contractual procedures and mitigating measures.

Mitigating Measures:
It is IForUT Policy that best practice will be followed for all forestry operations, which includes adherence with the suite of DAFM environmental and water guidelines and requirements.

Application of chemicals is subject to weather conditions being suitable to this operation to avoid drift. The Forest Manager and Operator will agree on a suitable day(s) for spraying based on the weather forecast and in accordance to the suitable conditions specified on the product label.
Prior to any chemical application, it is IForUT policy to undertake Operational Planning, including EIAs and Health & Safety checklists, and all operations require signed contracts and are supervised by the Forestry Works Manager.

Operators must have:

- Appropriate training certificate for Pesticide Application
- Appropriate PPE (PPE should be worn at all times)
- First Aid Certificate
- First Aid Kit on site (containing sufficient eye wash for emergency use)
- Spill Kit on site containing a supply of absorbent material to deal with accidental spillage
- Public Liability & Employer Liability Insurance
- Suitable equipment which is in good working order

Operators will be provided by the Forest Manager with:

- FISA Safety Guide 202 'Application of pesticides by hand-held equipment'
- Hazard and Sensitivities Map
- Pollution Control Plan
- Emergency Response Details and Contact Numbers
- Site Risk Assessment/Site Environmental Impact Assessment
  (Including Risk Assessment on storage of chemicals in original manufacturer containers on site in locked containers during work hours. No chemicals will be stored on site outside work hours.)
- Operation Contract to be agreed and signed before commencement of work
- Signage to be erected to inform the Public of Spraying operations
- Chemical Usage Record for completion (containing section for reporting ill effects)

Monitoring & Control Measures:

Forest Managers will undertake (and record) supervision visits to check that:

- Health & Safety procedures are followed
- risk assessment controls are being adhered to
- industry best practice guidelines are being applied
- all site sensitivities are protected
- no ill-effects are being reported

Forest Managers will:

- Collect/complete chemical usage record
- Check all works are completed to specification and contract.
- Check all waste material and storage containers are removed from site.
- Follow up on any ill-effects as soon as reported

2. The Environment

Glyphosate, in products approved in Ireland for forestry by PRCD, has since 2024 been re-classified as harmful to aquatic life. Care should therefore be taken not to use chemicals near watercourses or near sensitive features, in accordance with best practice.

Like any chemical used in forestry, Glyphosate shall be used in minimum effective quantities, and with strict observation of controls and regulations relating to use.

Mitigating Measures:

It is IForUT Policy that best practice will be followed for all forestry operations, which includes adherence with the suite of DAFM environmental guidelines and requirements.

Application of chemicals is subject to weather conditions being suitable to this operation to avoid drift. Forest Manager and Operator will agree on a suitable day(s) for spraying based on the weather forecast and in accordance to the suitable conditions specified on the product label.

If flowing watercourses are present, the Forest Managers shall:

- Ensure that the site operatives observe all buffer zones (set backs) in relation to any of the watercourses present as outlined in the IPMS and DAFM environmental guidelines and requirements.
- Make sure that site operatives are in possession of risk assessment, pollution control plan, emergency contact numbers and site hazards and sensitivities map.
- Ensure that contractors have suitable facilities for preparation, cleaning and maintenance such that any spillage or run off will be prevented from entering watercourses.
- Check that site operatives fully understand the site hazards and sensitivities map and can easily identify such features on the ground.
- Familiarise him/herself with catchment and weather forecasts for the duration of operations.
- Stop operations, if at any point the mitigation measures identified are not proving adequate protection and
- Carry out emergency remedial works, if required, including monitoring water quality if required.

Operators must have:

- Appropriate training certificate for Pesticide Application
- Appropriate PPE (PPE should be worn at all times)
- First Aid Certificate
- First Aid Kit on site (containing sufficient eye wash for emergency use)
- Spill Kit on site containing a supply of absorbent material to deal with accidental spillage
- Public Liability & Employer Liability Insurance
- Suitable equipment which is in good working order

Operators must ensure that:

- Any washings be used as part of the application programme and that water for the programme is not abstracted[6] on site unless it is put in an intermediate container or the sprayer is fitted with a device preventing back siphoning.
- Preparation, cleaning and maintenance is only undertaken at suitable sites such that any spillage or run off will be prevented from entering watercourses
- Only the required amount of diluted spray is prepared for the areas to be treated.

Operators will be provided by the Forest Manager with:

- FISA Safety Guide 202 'Application of pesticides by hand-held equipment'
- Hazard and Sensitivities Map
- Pollution Control Plan
- Emergency Response Details and Contact Numbers
- Site Risk Assessment/Site Environmental Impact Assessment
- Operation Contract to be agreed and signed before commencement of work
- Signage to be erected to inform the Public of Spraying operations
- Chemical Usage Record for completion

Monitoring & Control Measures:

The Forest Manager will undertake (and record) supervision visits to check that:

- Health & Safety procedures are followed
- risk assessment controls are being adhered
- industry best practice guidelines is being applied
- all site sensitivities are protected

The Forest Manager will:

- Collect/complete pesticide application record
- Check all works are completed to specification and contract
- Check all waste material and storage containers are removed from site and disposed of appropriately

[6] Taking water from a surface source (such as a river, stream or canal)

3. Social risk and the wider public

Forests near urban areas are more likely to be used for recreation (e.g. hiking, walking, dog walking, cycling) and some forests may be used for foraging for herbs, berries or mushrooms. Some forests may have third party rights, such as rights of way, shooting or fishing rights. These types of access will be taken into consideration in the decision making process when choosing weed control measures.

With regards to the use of Glyphosate in forestry, it should be noted that Glyphosate is considered to present a low risk to wildlife when used in accordance with label instructions and best practice.

Mitigating Measures:

It is IForUT Policy that best practice will be followed for all forestry operations, which includes adherence with the suite of DAFM environmental guidelines and requirements.

Chemical pesticides shall be used in minimum effective quantities, and with strict observation of controls and regulations relating to use and confined to the intended target area by using appropriate application equipment to prevent spray drift and run-off. All products should always be applied in accordance with the product label and care should be taken to select the most appropriate pesticide for the target and situation.

In public areas such as roads, railways and other areas used by the general public, the use of any pesticides should be avoided or strictly limited and the amount of pesticide and the frequency of use should be kept to the minimum required to achieve effective control. Careful consideration should be given to product selection, appropriate application rates and dosage frequency.

It is IForUT policy to always manually apply chemicals carefully and directly for the targeted weed (spot application).

Where access to the forest is provided to the public, access to routes leading to work sites will be closed off and dated notices shall be posted to inform the public of chemical pesticide use.

These notices advise the public to:

- keep to the roads and tracks
- keep dogs on the lead
- not gather plant materials

All chemical applications will be stopped if an unauthorised person enters the work site.

Local caretakers, immediate neighbours, and people with third party access rights will be informed in advance of any chemical spraying.

Glyphosate is considered to present a low risk to honeybees when used in accordance with label instructions and best practice. While there is no requirement to avoid application of the product when bees are foraging on flowering weeds in treated crops, it would be recommended to engage with and inform local beekeepers prior to undertaking any spraying.

All other mitigations as listed under point 1 and 2 also apply.

4. Guidance Note

This ESRA should be read in conjunction with the following IForUT FMM documents:

3. Health & Safety Policy
3.0 Health & Safety Policy Statement

4. Management Planning
4.1.16 Pesticide Usage Policy

4.8 IForUT Integrated Pest Management Strategy

5. Operational Procedures
5.13 Chemical Application Procedure
5.19 Monitoring Plan
5.22 Water Quality Monitoring

6. Contract Documentation
6.1 Hazard Identification & Risk Assessment (HIRA)
6.4 Emergency Contact Details
6.5 Pollution Plan & Site Safety Rules
6.8 General Operations Contract
6.12 Pesticide Usage Record
6.18 ESRA Operational Checklist

Best Practice Guidance
FISA Guide 202 'Application of pesticides by hand-held equipment'
DAFM Good Plant Protection Practice[7]

This ESRA contains requirements designed to control, and mitigate against, the risks associated with the application of chemicals to operators, the environment and the wider public and represents best practice in the use of pesticides.

The above suite of documents are designed to assist the Forest Manager in implementing the controls and mitigating measures outlined in this ESRA in practice at FMU level, through the use of pre-commencement checklists, monitoring of operations and detailed record keeping when the operations have been completed.
The monitoring intensity is determined by the scale and intensity of the operation, the level of experience of the contactors and the risks imposed.

7 https://www.pcs.agriculture.gov.ie/media/pesticides/content/sud/professional/Good%20Plant%20Protection%20PracticeGPPP040624MLU050624.pdf