

Herbicides Usage & Management SOP

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CONTENTS

| | | |
|-----|---|----|
| 1. | INTRODUCTION | 3 |
| 2. | SCOPE | 3 |
| 3. | DEFINITIONS | 3 |
| 4. | HEALTH & SAFETY | 5 |
| 5. | RESPONSIBILITIES | 6 |
| 6. | ENVIRONMENTAL CONDITIONS | 7 |
| 7. | POLLUTION PREVENTION AND SPILL CONTROL | 8 |
| 8. | HERBICIDE APPLICATION | 8 |
| 9. | AQUATIC HERBICIDE APPLICATION | 11 |
| 10. | TRAINING AND DOCUMENTATION | 11 |
| 11. | STORAGE FACILITIES | 12 |
| 12. | DECONTAMINATION/DISPOSAL | 12 |
| 13. | REFERENCES | 13 |
| 14. | APPENDIX 1 – JKC SPRAY PROTOCOL | 14 |
| 15. | APPENDIX 2 – HEALTH & SAFETY CHECKLIST | 15 |
| 16. | APPENDIX 3 – RISK ASSESSMENT (EXAMPLE) | 16 |
| 17. | APPENDIX 4 – MIX RATIO GUIDE | 17 |
| 18. | APPENDIX 5 – TIME SHEET | 18 |
| 19. | APPENDIX 6 – SPRAY NOZZLE CALIBRATION CHART | 19 |
| 20. | APPENDIX 7 – SPRAY STORE RECORD SHEET | 20 |
| 21. | APPENDIX 8 – HERBICIDE USAGE RECORD SHEET | 21 |
| 22. | APPENDIX 9 – SPRAY OPERATOR DETAILS | 22 |
| 23. | APPENDIX 10 – METHOD STATEMENT | 23 |
| 24. | APPENDIX 11 – USEFUL ADDRESSES | 24 |

1. Introduction

1.1 The purpose of this standard operating procedure (SOP) is to define an application protocol for the routine and non-routine handling, storage and application of herbicides. This SOP provides a comprehensive policy to comply with the relevant UK regulations, legislation and guidance for the use of Herbicides and provide a consistent implementation for Japanese Knotweed Control Ltd (JKC)

2. Scope

2.1 The scope of this SOP is to focus on the safe storage, handling and use/application of herbicides and to prevent herbicides from entering non-targeted environments or discharging to drainage systems and water bodies. This protocol is applicable to: -

- The safe handling, storage and management of herbicides;
- The outdoor use of herbicides;
- The use of herbicides where the materials may come into contact with precipitation;
- The use of herbicides where these materials may come into contact with runoff (*natural or induced*); and;
- The use of herbicides anywhere where they may be directly or indirectly discharged to a drainage system;
- The use of herbicides anywhere where they may be directly or indirectly discharged to a water-course or water body

2.2 This protocol is applicable to all JKC staff and contracted services that apply or handle herbicides/hazardous materials, and herbicide application staff/operators.

2.3 This protocol is not applicable to the indoor use of herbicides, but is applicable to the consequential outdoor handling, mixing, transport, or disposal of materials related to indoor use. Additional information for each herbicide can be found on the manufacturer's label.

3. Definitions

Application – means the use of the product as a fumigant, direct surface spray, treatment, drench, injection, incorporation, stem-dressing, pre-emergent, furrowed spread, or broadcast agent.

Direct On-site Supervision – A QAC (or QAL, if services contracted) is physically present and available, on-site (within the location as specified in the Project/Work/Job Plan) to directly manage and control the application (of any herbicides) by supervising others. The QAC or QAL manages and controls the application of herbicides through available verbal communication, documentation, records (including photographic) and direct interaction and/or electronic communications.

Feasible – means capable of being accomplished in a successful manner, within a reasonable period of time, taking into account economic, environmental, social, and technological factors.

Forecasted Storm Event – A weather event predicted to commence within the next 24-hour time window, where at least 5mm of rain or more is forecasted to fall.

Herbicide – A common herbicide focused on killing weeds and other plants that grow where they are not wanted.

Integrated Weed Management (IWM) – means a sustainable approach to managing Weeds by combining biological, cultural, physical and chemical tools in a way that minimizes economic, health, and environmental risks.

Manufacturer's Label – The main source of information on how to store and use the product correctly, safely, and legally. The main sections of a label are: common name and brand name, active ingredient, signal words, first aid, directions for use, and storage/disposal.

Material Safety Data Sheets (MSDSs) – An information sheet provided by a chemical manufacturer describing chemical qualities, hazards, safety precautions, and emergency procedures to be followed in case of a spill, fire, or other emergency.

Non-Routine Application – A non-scheduled application to include a “one-time” or an “emergency” use of herbicides.

Notice of Intent (NOI) for Herbicide Usage– An oral or written notification submitted prior to the use of a restricted use herbicide, pursuant to a permit.

Herbicide – any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any fungi, weeds, or any other forms of life declared to be Weeds, and any substance or mixture of substances intended for use as a plant regulator, defoliant, or desiccant.

Qualified Applicator Certificate Holder (QAC) – Any person who has successfully passed an JKC accepted qualification (Including in-house training), and qualified in one or more weed control categories and may therefore apply restricted materials, supervise herbicide application, but who is not entitled to supervise the operations of a weed control business.

Qualified Applicator License Holder (QAL) – Any person who has successfully passed an JKC accepted qualification (Including in-house training), and qualified in one or more weed control categories and may therefore apply restricted materials and supervise the herbicide application/operations made by a licensed weed control business.

Routine Application – A scheduled (weekly, quarterly, annually, etc.) use of a herbicides to attain a specific goal.

Signal Word – Defines approximately how hazardous a herbicide could be to people by using descriptors such as DANGER, WARNING, CAUTION, or DANGER-POISON.

Storm Event – A weather event that produces more than 5mm of precipitation.

Use – means any herbicide related activity including:

- Pre-application to include arranging for application, mixing, loading, and making necessary preparations for application;
- Application of the herbicide; and
- Post-application activities – control of the treated area, management of the treated area, transportation, storage, disposal of excess herbicides, equipment wash, containers, and cleaning of equipment.

Use does not include emergency responders, commercial transportation, manufacturing, formulating, or packaging.

4. Health & Safety

4.1 Precautions

| | | |
|--|---|---|
|  <p>Safety goggles are to be worn at all times when handling batteries.</p> |  <p>Protective clothing must be worn.</p> |  <p>Sturdy acid resistant footwear is to be worn at all times in work areas.</p> |
|  <p>Chemical resistant hand protection must be worn.</p> |  <p>Sunblock SPF 30+ must be worn on all exposed skin</p> |  <p>A facemask suited to the product used. Refer to the product Safety Data Sheet.</p> |
|  <p>No smoking in area</p> |  <p>Restricted access to area being sprayed must be visibly indicated and enforced</p> |  <p>Signage to be displayed to indicate spraying is in progress</p> |

This SOP does not necessarily cover all possible hazards associated with equipment used and should be used in conjunction with supplier's Safety Data Sheet. It is designed as a guide to be used to compliment training and as a reminder to users prior to equipment use.

4.2 Pre-Operation Safety Check

A safety check list must be completed for each job/site

[See Appendix 2](#)

4.3 Risk Assessments

A risk assessment must be completed for each job/site

[See Appendix 3](#)

4.4 Product Information

The main source of information for using herbicide safely and effectively is the product label. This must come with the product container supplied with the product. The label is normally permanently fixed to the container but, for some products, detachable or separate leaflets will be supplied.

All labels have the phrase '**Read all safety precautions and directions for use before use**'. It is essential that operators read and understand all the information contained in the label (*and any leaflets supplied with the product*). before using the herbicide safely and effectively, taking account of the specific proposed treatment and the circumstances and environmental conditions. By law you must take 'all reasonable precautions' when using Herbicides.

To do this the operator must consider the label as a whole and make a judgement about the equipment and intended use of the product. When reading a product label, the most important parts to consider are protecting the operator, protecting the environment, protecting consumers, storage and disposal, and medical advice. Some of these factors on the label will apply to more than one of these groups.

a. Protecting the operator and others in close proximity – check whether the label says anything about:

- the need to carry out a COSHH assessment, as appropriate;
- the need to use engineering controls (for example, closed cabs when making air-assisted applications);
- the need to use specific personal protective equipment (PPE);
- any medical conditions which may be made worse (for example, when intending to use a product containing an organophosphate or a carbamate with anticholinesterase effects);
- the need for treated areas to be ventilated after treatment before re-entry and/or entry to be prevented for set periods of time; and
- other safety measures such as:
 - cleaning the PPE;
 - what to do if someone is contaminated; – the need for any specialised training;
 - good hygiene practice; and
 - using refillable containers.

b. Protecting the environment – check whether the label says anything about:

- not using the product outside;
- the need for keeping the areas out of bounds after treatment to protect livestock;
- removing or burying spillages;
- the need for buffer zones to protect water, and whether they can be reduced by LERAP assessments;
- the need for buffer zones to protect insects and other creatures you don't intend to treat;
- the need to remove pets and livestock before use or to keep animals and birds out of the treatment area; and
- protecting bees by not treating flowering plants.

c. Protecting consumers – check whether the label says anything about:

- not using the product on food crops, in food storage or preparation areas or in occupied buildings;
- the maximum dose or maximum concentration for some products applied as high-volume sprays;
- the maximum number of treatments or maximum total dose;
- the latest time that the product can be used depending on the crop-growth stage or harvest interval; and
- other specific restrictions (for example, the maximum concentration of the product in the spray solution or the minimum water volume, the minimum interval between applications or restrictions on using certain types of equipment to apply the product).

d. Storage and disposal – check whether the label says anything about:

- storing the product away from food, drink, animal feed and where children cannot see or reach it;
- keeping products locked away;
- storing products that are supplied in water soluble sachets; and
- rinsing, emptying, disposing of, returning or reusing the container type (as appropriate).

e. Medical advice – check whether the label says anything about:

- what to do if someone is contaminated or suffers health problems after using Herbicides;
- contacting the National Poisons Information Service (NPIS); and
- other types of first aid.

4.5 Other relevant information

Additional product information may come from the supplier and can include the following:

- Material safety data sheets (MSDS). These have important information on what to do in an emergency though this information often also appears on the product label for many products;
- For many amenity products, information cards that can be given to members of the public who ask about the product; and
- Environmental information sheets (EIS) are available for many products to add to the information on the product label about the risks to the environment and how to control them.

5. Responsibilities

5.1 JKC shall:

- Designate a QAC or QAL holder, to provide advice and assistance in all matters related to herbicide usage, disposal of products, and safety.
- Provide herbicide Spray Operators (including contracted businesses) with appropriate record keeping forms to document herbicide use.
- Annually verify that the purchasing, storing, mixing, loading, and safety tasks for herbicide, herbicide, and herbicide use are in accordance with this protocol, applicable laws, and regulations including the current and valid NPTC, BPCA and/or BASIS certifications.
- Verify that no banned or unregistered herbicide is stored or applied.
- Request landscapers to implement procedures to encourage the retention and planting of native vegetation to reduce water, herbicide and herbicide needs.
- Coordinate annual refresher training courses for all herbicide handlers to meet the continuing education requirements.

5.2 Herbicide Spray Operators shall:

- Be certified as or under the direct on-site supervision of, a QAC or QAL holder and be properly trained to start work with herbicides, and/or herbicides.
- Follow manufacturer's label instructions and this SOP. When such instruction is in conflict with this SOP, the label instructions will be followed.
- Ensure that no banned or unregistered herbicide is stored or applied.
- Follow the policies and procedures established in this application protocol.
- Report any unsafe work practices to their respective supervisors.

5.3 Integrated Weed Management Program (IWM)

JKC and Herbicide Spray Operators shall implement an IWM program that includes the following:

- Herbicides are used only if monitoring indicates they are needed according to established guidelines.
- Treatment is made with the goal of removing only the target organism.
- Weed controls are selected and applied in a manner that minimizes risks to human health, beneficial, non-target organisms, and the environment.
- Its use of herbicides do not threaten water quality.
- Partner with other agencies and organizations to encourage the use of IPM.
- Adopt and verifiably implement policies, procedures, and/or ordinances requiring the minimization of herbicide use and encouraging the use of IWM techniques (including beneficial organisms) in the Permittees' overall operations and on municipal property.
- Policies, procedures, and ordinances shall include commitments and timelines to reduce the use of herbicides that cause impairment of surface waters by implementing the following procedures:
 1. Quantify herbicide use by its staff and hired contractors.
 2. Prepare and annually update an inventory of herbicides used by all internal departments, divisions, and other operational units.
 3. Demonstrate reductions in herbicide use.
- Products which act in a 'contact' fashion should only be applied to growing weeds, whereas those which act in a 'residual' fashion should only be applied to those areas in which weeds may grow (e.g. curbs, gaps between paving stones, etc). In general terms, applying herbicides in a 'blanket' fashion to a hard surface is not appropriate and is to be avoided

6. Environmental Conditions

6.1 Environmental conditions (*weather and site conditions*) required for application of herbicides is dependent upon label. Site conditions are determined by visually (**V**) observing the area for situations or by collecting information from recognized weather forecasting (**F**) organizations. For example, storm events can be tracked by using any Internet web link that forecasts rainfall (e.g. [Metoffice.gov.uk](https://www.metoffice.gov.uk)).

6.2 The following table is provided as a guide to Spray Operators where weather or site conditions may impact the application of the herbicides. Weather/Site conditions must be verified for all listed conditions. Forecasting may be used for other weather/site conditions, but it is necessary to establish a 24-hour timeframe prior to actual rainfall. A “**Yes**” indicates the weather/site conditions where application of herbicides may occur. A “**No**” indicates weather/site conditions where application of herbicides may not occur.

| Weather/Site Conditions | Form of Determining Weather/Site Conditions | Routine Application | Non-routine Application |
|---|---|--|-------------------------|
| Wind-free (sufficient to avoid spray drift from point of application) | V | Yes | Yes |
| Storm events (see definition) | V | No | No |
| Within one day of a forecasted storm event (see definition) > 5mm | V,F | No (except for application of pre-emergents) | No |
| After a storm event where water is leaching or running | V | No | No |
| Water is running off-site | V | No | No |
| Rising groundwater | V | No | No |
| Ground is saturated | V | No | No |

7. Pollution Prevention and Spill Control

7.2 Irrigation canals, open trenches, surface waters, wetlands, designated sources should be noted and application shall be made to prevent contamination of these areas.

7.3 In the event that herbicides, and/or herbicides not intended for water application are inadvertently sprayed or spilled into the water sources listed above, the following steps are to be taken:

1. Stop all herbicide applications and assess the situation.
2. Prevent further contamination of water sources by using control measures such as storm drain inlet protection, absorbent materials, sandbags, or trenching.
3. Mark the area where the spill or overspray occurred.
4. Contact the environmental coordinator in your jurisdiction.
5. Report the spill to the appropriate department for clean-up.
6. Contact governmental agency of reportable quantities.

8. Herbicide Application

8.1 For control of Weeds and weeds on land, only those materials specifically designed and registered for direct water application may be used. Directions on the labels must be followed as well as evaluating the application for the potential to harm the environment. Currently, the following is required prior to applying an aquatic herbicide.

8.2 Knapsack Spray key action points

- Ensure all knapsack operators have necessary qualifications
- Check calibration of different knapsack sprayers ([See Sprayer Nozzle Calibration – SNC200616.1](#))
- Service and maintain knapsack sprayers regularly
- Anvil-style knapsack nozzles will deliver a flat fan spray pattern and even coverage
- Fit an appropriately sized nozzle to deliver a medium to fine spray pattern
- Follow advice on herbicide application timing

8.3 Knapsack sprayer calibration

- Knapsack calibration is essential to know the volume of spray mix – and consequently the application rate of Rescue – being applied across a given area.
- Mark out an area 10 m x 10 m (100m²) on a surface typical of that to be sprayed
- Walking through deep rough or uneven terrain is more difficult, resulting in significantly different application rates.
- Half fill the knapsack sprayer with clean water. Place on a flat surface and mark precisely the water level with a waterproof pen
- Be aware walking speed can vary considerably when carrying a full sprayer, compared to when empty.
- Carefully spray the pre-marked area
- Check your sprayer pattern and spraying technique first.
- Put the sprayer back on the flat surface and, using a measuring jug or large syringe, refill the sprayer back to the marked line
- Water volume used = application rate per 100m²
- Repeat the calibration process for different surfaces and terrains being sprayed.
- Different operators will walk at different speeds; check calibration for each operator and instigate standard spraying practices.
- Check the calibration for each different knapsack sprayer; it can vary considerably between manufacturers and sprayers.
- For an alternative knapsack calibration technique visit the Application Zone on

8.4 Application

- Where spraying large areas use a cane to mark the end of each run (allowing for the required spray pattern) and ensure even coverage across the area.
- Spray at the required height above the target to attain the desired spray pattern.
- Do not spray out right to the bottom of the tank, unless it is the last tank of the job. Spray pattern and application rate of knapsack sprayers at the end of the tank is always poor.
- Carry a cane, fixed to the knapsack with an elastic band, to mark any point where spraying was stopped to refill.
- If there is any spray mix left when the treated area has been completed either:
 - spray out on an additional area where the problem being treated is an issue and mark on your spray records accordingly, or
 - dispose of safely through and approved waste disposal route. **DO NOT** re-spray over the treated areas.
- Ideally designate specific knapsack sprayers for herbicide and fungicide applications

8.5 Checking spray pattern

- Operators should check knapsack sprayers and spraying technique to ensure a consistent and even spray pattern.

- Clean all filters (including within the lance handle if appropriate) and check seals to ensure sprayer is achieving consistent and even pressure with a smooth, easy pumping action.
- Visually inspect the nozzle for scuffs or burrs; unprotected knapsack nozzles are frequently damaged when spraying hard surfaces. Replace as necessary.
- Wash out the sprayer thoroughly and fill with clean water. On a dry concrete surface, follow your typical spraying technique to check even distribution and coverage.
- Assess overlap or distance between passes to achieve even coverage.
- Check for consistent spray coverage between pumps of the handle and to ensure any pressure regulator valve is working efficiently.
- Adjust spraying technique and speed to achieve good coverage.

8.6 The use of spray marker

- dye can help to ensure even coverage and avoid misses with knapsack application.

8.7 Key Knapsack Spray Tips

- The use of spray marker dye can help to ensure even coverage and avoid misses with knapsack application.
- Paint canes white to make them easily visible when spraying in tall/overgrown areas
- Fix a piece of cord or light chain to the end of the lance, cut to the required spraying height as a guide

8.8 Japanese Knotweed Treatment

- Previous year's growth should be cleared during the winter months (This facilitates a more even new stem growth and makes spraying easier.)
- Treated plants take up to 6 weeks to show symptoms. Only remove plant material when there is no further sprouting. Only re-spray if there are **NO** visible signs of dieback after 6 weeks.
- As with most broad-leaved perennials, optimum control will be achieved from treatment at flowering in August or September but before die-back.
- Late season treatment is preferred and is the most effective with glyphosate as the chemical is transported deep down into the underground rhizome structure along the natural flow of plant nutrients for winter storage.
- Japanese Knotweed is sensitive to frost so late season applications should be made in advance of the first frosts.
- For established stands it is important to plan an effective management programme over several years as repeat applications may well be necessary, either to control very large plants, with their associated underground mass of rhizomes, or to control those plants which were missed by earlier applications due to shading. Sites should be monitored for at least three years.

8.9 Alternative Application Techniques (Japanese Knotweeds)

8.9.1 Foliar Spray

- The optimum timing for using Foliar Spray with Japanese Knotweed is at Flowering
- Use of specialist extending hand lances is recommended where plants are 2-3m tall
- Spray the underside as well as the upper surface of the leaves.
- Two Foliar Sprays at 1 Metre Stem Height
- Spray the plants at 1-1.5m tall, in late May and repeat on any re-growth later in the season once they reach 1.5m again. This technique can be used where stands are particularly thick, as part of an integrated control programme or where long lances are not available

8.9.2 Weedwiper Technique

- Applications using a hand held weed wiper have proved successful. This method can be useful where treatment of nearby vegetation is to be avoided or for spot treatment of small re-growth. Weed wipers have a high success rates, but the process is labour intensive.

8.9.3 Stem Filling Technique

- In certain situations, such as when the Japanese Knotweed is growing on sites with a ground flora considered of particular value or a Cornish hedge, or in a garden situation where the Knotweed is growing close to other plants, a stem filling technique may prove a suitable alternative.
- Stem Fill requires a far higher labour input; however, the herbicide can be more accurately directed.
- Japanese Knotweed Stems should be cut 15-20mm from the ground and the selected glyphosate solution should be introduced with water directly through the top of the stem.
- It can also be beneficial to cap the stems off with 'cling-film and a rubber band to limit exposure of chemicals to the surrounding area.

9. Aquatic Herbicide Application

9.1 Chemical control in aquatic areas requires Environment Agency (EA) approval. A WQM 1 form must be submitted to the local EA office prior to works being conducted.

9.2 For control of Weeds and weeds in open water, storm drainage system, and flood control channel areas, only those materials specifically designed and registered for direct water application may be used. Directions on the labels must be followed as well as evaluating the application for the potential to harm the environment. The following is required prior to applying an aquatic herbicide:

1. Coverage is obtained and compliance is achieved under EA WQM1.
2. Directions on the label are followed.
3. The application site is evaluated prior to application for the potential of the herbicide to harm the environment.

10. Training and Documentation

10.1 QAC and QAL Requirements and be registered with National Register of Sprayer Operators (NRSO)

10.2 Each JKC will only use staff (*including contracted businesses*) that are under the direct on-site supervision of a QAC/QAL holder. The QAC/QAL must possess a valid and current certification (NRSO). The spray operator is responsible for following health & safety and regulatory requirements as well as all label requirements and reviewing the MSDS prior to use.

10.3 Training

Each person who applies herbicides must be trained for the following:

1. Appropriate application of the herbicides.
2. Application laws and regulations
3. Effects application may have on stormwater quality management
4. The type of chemical and the immediate and long-term hazards resulting from exposure
5. The MSDS information
6. Safety procedures
7. Emergency spill information
8. Use of protective equipment
9. Clean-up procedures
10. Disposal procedures

11. Storage Facilities

11.1 JKC will adopt a purchase, storage, and disposal policy such that all herbicides are under the control of a QAC/QAL holder. Herbicide storage facilities shall meet regulatory requirements to prevent releases into the surrounding environment, waterbodies, or be exposed to stormwater and protect the safety of personnel working within such facilities. These herbicides storage facilities shall be locked/secured when not in use. All doors/entrances to the facilities shall be posted with appropriate warning signs. All signs shall be legible at a minimum distance of 10 metres from any direction.

11.2 Herbicide containers should not be stored on the floor or bare ground. No floor drains, which empty into storm drains, are permitted within the storage facility. All herbicides in a storage facility shall either be in the original container, or the service container. Secondary containment is recommended, but not mandatory. All containers will have a copy of the product label attached.

11.3 Open bags of herbicides must be enclosed in a secondary container (*a closed heavy plastic bag, or can with a tight lid*), to prevent exposure or spillage. If the original herbicide containers are metal and are in a state of rust or deterioration, properly labelled plastic or metal secondary containers shall be provided to prevent accidental leakage.

12. Decontamination/Disposal

12.1 Each JKC operative will adopt a decontamination and disposal procedure that is managed by a QAC/QAL and meets the following minimum requirements. Liquids produced during the decontamination process shall be handled according

to UK requirements and managed to reduce exposure to stormwater and from entering the storm drain system or surface waters.

12.2 Clean-up

Containers used to apply herbicides of 100 litres or less must be triple rinsed after each use. Containers sent back to the manufacturer will follow manufacturer's recommendations for transporting. The triple-rinse procedures will consist of the following:

1. Use 1/4 the container volume for containers less than 20 litres and 1/5 the container volume for containers greater than 20 litres.
2. Place rinse medium in the container, securely close, agitate.
3. Drain rinse solution into tank mix. Allow draining 30 seconds.
4. Repeat steps b. and c. a minimum of two times; or
5. Invert emptied container over a nozzle located in the opening of the mix tank that is capable of rinsing all inner surfaces of the container.

12.3 Disposal

Herbicide, and herbicide waste includes leftover chemicals and chemical container rinsates. All herbicide waste shall be treated as hazardous waste. Minimization of herbicide waste is a high priority for the herbicide user.

12.4 If waste is stored before removal, it should be stored in an area that is not exposed to stormwater, stormwater runoff, or surface water.

12.5 Storage

Storage of herbicides should be in accordance with requirements as specified in the manufacturer's instructions.

13. References

13.1 Regulations

1. Part III of the Food and Environment Protection Act 1985 (FEPA)
(<http://www.legislation.gov.uk/ukpga/1985/48>)
2. Health and Safety at Work etc. Act 1974 (HSWA)
([H&S at Work Act 1974](http://www.legislation.gov.uk/ukpga/1974/37))
3. COSHH
(<https://www.hse.gov.uk/pubns/guidance/cosHH-technical-basis.pdf>)
4. The UK National Action Plan for the Sustainable Use of Herbicides
([NAP PPP](http://www.defra.gov.uk/pesticides/nap/ppp/))
5. Article 4 of EU Directive 2009/128/EC
([Article 4 of EU Directive 2009/128/EC](http://eur-lex.europa.eu/LexUriServ.do?uri=OJ:L:2009:309:0071:0086:en:PDF))
6. PPP (SU) Regulations 2012; SI 2012 No' 1657)
(<https://www.legislation.gov.uk/uksi/2012/1657/contents/made>)
7. EC Regulation 396/2005
(<https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CONSLEG:2005R0396:20121026:EN:PDF>)
8. EU Directive on the sustainable use of herbicides, published in 2009
(<https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:309:0071:0086:en:PDF>)
9. The Conservation (Natural Habitats, &c.) Regulations 1994
(<http://www.legislation.gov.uk/uksi/1994/2716>)

14.2 Web Sites

1. HSE – <https://www.hse.gov.uk/agriculture/topics/herbicides.htm>
2. Weather tracking – [Metoffice.gov.uk](http://www.metoffice.gov.uk)
3. Environmental Protection Agency – [environment-agency](http://www.environment-agency.gov.uk)
4. OFWAT– <https://www.ofwat.gov.uk>

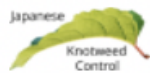
14.3 Useful Contacts

[See Appendix 11](#)

14. Appendix 1 – JKC Spray Protocol

| <div>  <div> Spray Protocol-2020 Invasive Species – <i>fallopia japonica</i> (Japanese Knotweed) </div> </div> | | | | | |
|---|---------------------------|-----------------------|---------------------------|----------------------|-------------------|
| Chemical | Application Rate KS/SI | Spray Period | Plant condition | Previous Chemical | Use near Water |
| Depitox* | 12ml per Litre (KS) | 1 st Spray | Healthy > 1m | None | No |
| Mixture B NF* | 0.5ml per Litre (KS) | Use with Depitox | See Depitox | See Depitox | No |
| | | | Healthy > 1m Unhealthy | | |

15. Appendix 2 – Health & Safety Checklist



Health & Safety Checklist

Spray Operator Name:

Date:

Site:

PRE-OPERATIONAL SAFETY CHECKS

Initial

| | |
|--|--|
| Ensure all protective workwear is in good order (<i>Face Mask, Goggles, Gloves, Boots, Overalls [Sleeves Down] etc.</i>) | |
| Ensure a communications plan is in place (<i>including contact information, see Sprayer Operator Details OD200616</i>) | |
| Ensure all applicable Safety Data Sheets are available | |
| Always read the Safety Data Sheet before handling herbicides | |
| Check that the work area is free of obstacles and hazards | |
| Complete site specific risk assessment | |
| Complete visual check of plant before operation | |
| Ensure you are familiar with plant operations and controls | |
| Determine appropriate herbicide for vegetation type | |
| Determine appropriate concentration in accordance with manufacturer's instructions | |
| Read manufacturer's instructions and Material Safety Data Sheets | |
| Read label thoroughly before opening containers | |
| Ensure appropriate spill clean-up procedure or material is on hand | |
| Assess weather conditions and impact of wind drift | |
| Check spray equipment nozzle calibration (complete calibration record SNC200616) | |

OPERATIONAL SAFETY CHECKS

Initial

| | |
|--|--|
| Prepare only enough chemical for immediate use | |
| Work in a well ventilated area when handling concentrate and accurately measure out the active ingredient required | |
| Ensure workers wash hands after mixing | |
| Ensure appropriate and effective signage is in place | |
| Clear all bystanders from the area before commencing spraying | |
| Never carry passengers | |
| Operate plant and equipment in a manner suitable to the conditions of the work area and environment | |
| Spray accurately, neatly and consistently | |
| Ensure that only targeted vegetation is sprayed | |
| Clean up any spills and dispose of according to relevant Safety Data Sheets | |
| Before making adjustments bring plant to a complete standstill and isolate | |


ENDING OPERATIONS

Initial


| | |
|--|--|
| Add any herbicide waste to the spray tank for use on the next job | |
| Ensure hands are thoroughly washed after spraying and before eating or drinking | |
| Store herbicides in their original containers in a locked and well ventilated storage area | |
| Complete Herbicide usage record (HURS200616) | |

Document Ref. HSCL200616.1

16. Appendix 3 – Risk Assessment (example)

|  <h2 style="margin: 0;">Risk Assessment</h2> | | Assessment Ref. Assessment Date Review Date |
|--|--------------------------------|---|
| Site Address Work Activity Being Assessed | | |
| Hazard | People / Area at Risk | Precautions / Controls Required For Risk Reduction To Lowest Level |
| Use Of Chemicals | Spray Operatives Site users | <ul style="list-style-type: none"> - Wear correct PPE (personal protective equipment) and use chemicals as per instructions - Be aware of spray drift during treatment, tailoring usage around weather conditions. - Ensure any persons other than those carrying out spraying are away from working area, and signs stating that spraying is in progress - Ensure nobody enters the site |
| Trip Hazards | Spray Operatives Site users | <ul style="list-style-type: none"> - Ensure hoses / cables are stowed safely, Clear signage in areas of operation in accordance with training received, and safe working practices |
| Equipment | Spray Operatives Site users | <ul style="list-style-type: none"> - Survey and assess terrain in which work is to be carried out, taking note of hazardous areas and using caution accordingly - Two men to be present, constantly informed of each others actions |
| Terrain | Spray Operatives Site users | <ul style="list-style-type: none"> - Survey and assess terrain in which work is to be carried out, taking note of hazardous areas and using caution accordingly - Two men to be present, constantly informed of each others actions |
| Effect Of Chemical On Surrounding Area | Harm to non-target vegetation | <ul style="list-style-type: none"> - Ensure chemicals selected for use are appropriate for working area. - Measures to be taken to ensure non-target vegetation affected e.g use of weed wipers in high risk areas. Avoid spraying in windy conditions, check weather forecasts for the area |
| | | Low risk |
| | | Low risk |
| | | Low risk |
| | | Low risk |
| | | Low risk |
| Risk Levels: <div style="display: flex; justify-content: space-around; align-items: center; margin-top: 5px;"> <div style="text-align: center;"> <div style="width: 20px; height: 10px; background-color: #d4edda; border: 1px solid #c3e6cb; margin: 0 auto;"></div> Low </div> <div style="text-align: center;"> <div style="width: 20px; height: 10px; background-color: #fff3cd; border: 1px solid #ffeeba; margin: 0 auto;"></div> Medium </div> <div style="text-align: center;"> <div style="width: 20px; height: 10px; background-color: #f8d7da; border: 1px solid #f5c6cb; margin: 0 auto;"></div> High </div> </div> <div style="margin-top: 5px;"> Minor impact/damage quickly repaired Moderate impact/partial loss of operations Disaster/very serious consequences </div> | | |

17. Appendix 4 – Mix Ratio Guide

| <div>  <div> <div>Mix Ratio Guide</div> </div> </div> | | |
|--|--|---|
| Label Rate l/ha | Equivalent Dilution | Usage / Weed Control |
| 1.5 | Mis Roundup ProActive per Litre water* | Seedling annual grasses and annual broad-leaved weeds |
| | 1:133 or 7.5ml/litre water | |

18. Appendix 5 – Time Sheet

20. Appendix 7 – Spray Store Record Sheet


| | |
|--------------|--------------------|
| Page of | |
| | |
| | Quantity |
| | Quantity Remaining |
| | Quantity Remaining |
| | Quantity Remaining |
| | Quantity Remaining |
| | Quantity Remaining |
| | Packaging Disposal |
| | |
| | Quantity |
| | Quantity Remaining |
| | Quantity Remaining |
| | Quantity Remaining |
| | Quantity Remaining |
| | Quantity Remaining |
| | Packaging Disposal |
| | |
| | Quantity |
| | Quantity Remaining |
| | Quantity Remaining |
| | Quantity Remaining |
| | Quantity Remaining |
| | Quantity Remaining |
| | Packaging Disposal |
| | |

Document Ref: SSP200916.1


| | | | |
|------------------|--|-----------------------|----|
| Ref: | | Page | of |
| | | Sprayer Operator Ref: | |
| | | | |
| Application Rate | | Total Used | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| Equipment Used: | | | |
| Wind Speed: | | | |
| | | | |
| | | | |
| | | | |

21. Appendix 8 – Herbicide Usage Record Sheet

22. Appendix 9 – Spray Operator Details

| | | | |
|---|-----------------------------------|---------------------------|----------------------|
|  | <h2>Sprayer Operator Details</h2> | | |
| Name: | <input type="text"/> | Contractor ¹ : | <input type="text"/> |
| Address: | <input type="text"/> | Address: | <input type="text"/> |
| | <input type="text"/> | | <input type="text"/> |
| | <input type="text"/> | | <input type="text"/> |
| Telephone No.: | <input type="text"/> | Telephone No.: | <input type="text"/> |
| Email: | <input type="text"/> | Email: | <input type="text"/> |
| <hr/> | | | |
| Emergency Contact Details: - | | | |

23. Appendix 10 – Method Statement

| Method Statement | |  Japanese Knotweed Control |
|------------------|---|--|
| 1 | Arrive on site | |
| 2 | Sign in (using time sheet TS200616.1) | |
| 3 | Ensure Spray Operator Details Form is Completed | |
| 4 | Review and complete COVID19 documentation | |
| 5 | Review Risk Assessment, check weather conditions and forecast (update if necessary) | |
| 6 | Conduct any induction needed for the site, Ensure signage is clearly visible for personnel on site | |
| 7 | Put on correct PPE for mixing chemical as per the manufacturer's label, ie, gloves, face shield, coverall | |
| 8 | Mix herbicide following manufacturer's instructions on the label and in a safe area, away from public and ground that could be contaminated or produce run-off if concentrate was spilt | |
| 9 | Complete Health & Safety Checklist | |
| 10 | Prior to spraying, conduct a visual risk assessment for the particular site, to take into account before starting the work: <ul style="list-style-type: none"> a Other person's activities on the site b Environmental factors which could be wind direction, wind speed, rain etc. c Any spray drift that could occur while working and how to minimise effect on neighbouring properties | |
| 11 | Record condition of foliage throughout areas to be treated with photographs (capture surface of leaves, stem condition and general surrounding areas) [Ensure GPS location is enabled for images] | |
| 12 | Carry out and complete work, following the project plan | |
| 13 | Complete Herbicide usage record | |
| 14 | Record condition of post treatment foliage throughout areas with photographs (capture surface of leaves, stem condition and general surrounding areas) [Ensure GPS location is enabled for images] | |
| 15 | Remove PPE in the correct manner & store safely | |
| 16 | Pack into the van correctly | |

24. Appendix 11 – Useful Addresses

| | |
|--|---|
| British Pest Control Association (BPCA) 1 Gleneagles House Vernon Gate South Street Derby Derbyshire DE1 1UP Phone: 01332 294288 Website: www.bpca.org.uk | Centre for Aquatic Plant Management (CAPM) Broadmoor Lane Sonning Reading Berkshire RG4 6TH Phone: 0118 9690072 Website: www.capm.org.uk |
| BASIS (Registration) Limited 34 St John Street Ashbourne Derbyshire DE6 1GH Phone: 01335 343945 Website: www.basis-reg.com | Chartered Institution of Wastes Management (CIWM) 9 Saxon Court St Peter's Gardens Marefair Northampton NN1 1SX Phone: 01604 620426 Website: www.ciwm.co.uk |

| | |
|--|--|
| <p>Countryside Commission John Dower House Crescent Place Cheltenham Gloucestershire GL50 3RA Phone: 01242 521381 Website: www.countryside.gov.uk</p> | <p>Department for Environment, Food and Rural Affairs (Defra) Nobel House 17 Smith Square London SW1P 3JR Phone: 020 72386000 Website: www.defra.gov.uk</p> |
| <p>Forestry Commission 231 Corstorphine Road Edinburgh EH12 7AT Phone: 0131 3340303 Website: www.forestry.gov.uk</p> | <p>Health and Safety Executive (HSE) HSE Information Services Caerphilly Business Park Caerphilly CF83 3GG Phone: 08701 545500 Website: www.hse.gov.uk</p> |
| <p>NPTC (formerly National Proficiency Tests Council) National Agricultural Centre Stoneleigh Kenilworth Warwickshire CV8 2LG Phone: 024 7685 7300 Website: www.nptc.org.uk</p> | <p>Office of Public Sector Information Website: www.opsi.gov.uk Does not give legal or public sector advice nor sell legislation. You can look legislation up on this site.</p> |
| <p>Lantra Sector Skills Council (and Lantra Awards) Lantra House National Agricultural Centre Stoneleigh Kenilworth Warwickshire CV8 2LG Phone: 024 76696996 (Sector Skills Council) Phone: 024 76419703 (Lantra Awards) Website: www.lantra.co.uk Website: www.lantra-awards.co.uk</p> | <p>Herbicides Action Network UK (PAN UK) Development House 56-64 Leonard Street London EC2A 4JX Phone: 020 70650905 Website: www.pan-uk.org</p> |
| <p>Water UK 1 Queen Anne's Gate London SW1H 9BT Phone: 020 7344 1844 Website: www.water.org.uk</p> | <p>Herbicides Safety Directorate (PSD) Information Services Branch Mallard House Kings Pool 3 Peasholme Green York YO1 7PX Phone: 01904 455775 Website: www.Herbicides.gov.uk</p> |