Brixham Town Council

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Title:	Use of Herbicide in Brixham		
To:	Community Services	**Date:**	17.06.19
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Purpose of the report
To consider the Town Councils use of Herbicides in public spaces and Council owned assets.

To consider taking steps towards Brixham becoming a pesticide free town.

Background
The Lengthsman service is a supplementary service instigated to support the work being carried out in the community by TOR2. This popular service is now in its second year of operation and is being developed into a full-time equivalent role from June 2019.

One of the duties undertaken by the Lengthsman is the control of weeds around the town. To date this has been managed by Total Droplet Control (TDC) using the herbicide 'Nomix Dual'. TOR2 use the same herbicide and method of application and treat every street in Brixham, twice a year during the growing period.

Resistance/ duplication
With both the Town Council and TOR2 treating weeds across Brixham with herbicide there is a risk of weeds becoming resistant and more importantly the potential duplication of herbicide in some areas which might have a negative effect on our environment.

Following a recent change in personnel neither of the current Lengthsmen have been trained in the safe handling and application of pesticides (Safe use & handling of pesticides PA1 and PA6a) and are currently removing weeds with hand tools. This is a good opportunity for the Town Council to review its methods for the control of weeds, reduce the Town Councils environmental impact and make a financial saving in both training and materials.

Nomix Dual is a residual herbicide approved for use on both hard and soft surfaces. It controls a wide range of emerged annual and perennial grasses and broad-leaved weeds. The product contains Glyphosate and Sulfosulfuron and must not be used near drains. Also contains 162 g/l (16.8% w/w) isopropylamine salt of glyphosate (equivalent to 120 g/l glyphosate), plus 2.22 g/l (0.23% w/w) sulfosulfuron, commonly used in many food and non-food crops. It is an active ingredient in the herbicide Roundup.

Total Droplet Control (TDC) is a sealed system, reducing the risk to the operator from contact with the herbicide. There is no mixing of herbicides required, limiting risk of spillages causing environmental contamination.

Nomix Dual Composition

Chemical name	No. CAS No. EINECS Index No.	Hazard symbols and risk phrases		Conc. (%) w/w
Isoproplamine salt N-(phosphonomethyl) Glycine equivalent to 120g/l glyphosate)	38641-94-0 254-056-8 015-184-00-8	Aquatic Chronic 2	H411	16.8
Sulfrosulfron Other formulating ingredients including mineral oils	141776-32-1 616-109-00-7	Aquatic Acute/ Chronic 1	H400 H4010 EUH 066	0.23 to 100

Ecological effects of Nomix Dual (taken from the environmental information sheet – voluntary initiative).

Wildlife, mammals and birds	Not classified as “Harmful to game or wildlife” No risk management is necessary to protect wild mammals and birds. NOMIX DUAL is of low toxicity to both mammalian species and birds. It will therefore pose a low risk to grazing mammals eg rabbits and field mice that may consume recently treated weeds or other mammals living in and around treated areas
Bees	Low risk to honeybees.
Insects & other arthropods	No risk management necessary. NOMIX DUAL poses a low risk to a range of arthropod species commonly found in and around treated fields. However, care should be taken to avoid spray reaching conservation areas.
Aquatic Life	Very toxic to aquatic organisms. May cause long term adverse effects in the aquatic environment. Do not contaminate surface waters or ditches with chemical or used container. NOMIX DUAL can be used safely providing care is taken to prevent spray drift reaching surface waters.
Soil & Groundwater Earthworms Soil micro-organisms	No risk management is necessary. Glyphosate has low mobility and persistence in soil. Sulfosulfuron has moderate persistence in soil. Use of NOMIX DUAL according to the label presents a low risk to groundwater. low toxicity to earthworms According to the label it presents a low risk to soil micro-organisms due to the nature of the application technology.
Non-Target plants	NOMIX DUAL is a non-selective herbicide intended for use in non-crop areas. Avoid spray drift on to neighbouring land or desirable plants.

While herbicides are not usually directly harmful to pollinators in themselves, their excessive use can diminish the supply of flowering plants on which pollinators depend.

Health and environmental effects
The use of glyphosate in public spaces has long been part of a wider debate around the herbicide. The general safety of its use in the public sector is still in question and remains a controversial topic. Despite the controversy surrounding the use of Herbicides the Environmental Protection Agency (EPA) has found no convincing evidence to restrict the use of herbicides. The health and environmental effects of many herbicides is unknown, and even the scientific community often disagrees on the risk.

Herbicides have variable toxicity in addition to acute toxicity arising from ingestion of a significant quantity rapidly, chronic toxicity arising from environmental and occupational exposure over long periods. Some herbicides cause a range of health effects ranging from skin rashes to death. The pathway of attack can arise from intentional or unintentional direct consumption, improper application resulting in the herbicide coming into direct contact with people or wildlife, inhalation of aerial sprays, or food consumption prior to the labelled preharvest interval.

Pesticide Action Network UK (PAN UK) states: 'Glyphosate has direct and indirect effects on the environment. Indirect impacts on birds and other animals occur due to the wiping out of weeds and wildflowers, destroying habitats and food supplies. Glyphosate is water soluble and has had significant effects on species that underpin the entire aquatic food chain with amphibians being particularly vulnerable.

Effects of Glyphosate on human health
According to PAN UK: In 2015, the International Agency for Research on Cancer (IARC) labelled glyphosate as "*probably carcinogenic*". Independent scientific studies have also begun to reveal numerous acute and chronic effects of glyphosate-based herbicides. In addition, the ingredients (adjuvants) added to glyphosate products may be toxic.

Studies have found that glyphosate-based herbicides can interfere with various organs and biochemical pathways in mammals. Genotoxicity and endocrine disruption also lead to chronic health and developmental effects. It causes imbalances in gut bacteria and some studies have found that glyphosate appears to accumulate in human cells. At low concentrations it damages liver, kidney and skin cells and long-term effects include cancer, infertility, pregnancy problems, birth defects and respiratory diseases.

Health & Safety Executive (H&SE)
The H&SE states: the regulatory process for authorising plant protection products (PPP) is a robust system. The authorisation process takes into account all scientific knowledge available.

All products which contain glyphosate must be individually authorised in Member States. Applicants for authorisation must show that their products are effective, humane and pose no unacceptable risks to people or the environment. If their products were to pose such risks, they would not be authorised; or if such effects were discovered later, they would be withdrawn.

Neither the EU's assessment of glyphosate as an active substance nor the UK's assessments of applications for authorisation of products which contain it have found the substance unacceptable for use.

Pesticide Free Towns
Recent decisions to go pesticide-free by Glastonbury, Lewes, Hammersmith & Fulham and other councils across the UK are all a result of local people campaigning for change. The *Pesticide Action Network UK (PAN_UK) has looked at the health effects associated with the fifteen most frequently used active substances in the amenity sector.

Glyphosate is the most widely used herbicide in the world and has been focused upon in recent years as a result of its classification as a probable human carcinogen (causes cancer) by the international Agency for Research on Cancer (IARC).

Pesticide free towns in the United Kingdom

- Brighton & Hove – first city to declare as pesticide free.
- Hackney
- Bristol
- Portsmouth & Havant
- Kensington & Chelsea
- Wadebridge
- Camden & Islington
- South Shropshire
- South Gloucestershire

**PAN UK are a UK charity focused on global pesticide use. Operating globally for over 30 years.*

Alternative solutions
The Town Council should trial alternative methods of weed removal. Short term options are listed below and should be subject to further investigation into the commercial viability of Brixham becoming a Pesticide Free Town.

It is widely recognised that going chemical-free is the morally right thing to do, but how does this translate into commercial viability? In an economic environment where funding continues to be cut, how do businesses invest in new technology to reduce the use of chemicals in our environment while still achieving the results that the public has grown to expect?

Options

- Hot foam systems, like hot water systems, kill plants using heat, but can be used in all weather conditions. This gives them a major advantage over chemical herbicides which can only be applied in dry weather conditions.
- Hand weeding which also has the benefit of being visually more appealing. Herbicide methods leave the weed in place to go brown and die.
- Acetic acid dilutions have been used very effectively to control weeds on hard surfaces in a variety of situations. Acetic acid is biodegradable and poses no risk of bioaccumulations.
- Various types of manual approaches are available in the form of differing types of mulching. This is a particularly useful approach in ornamental beds and in parks.
- Flame treatment can been used to successfully eliminate weeds.
- Steel brushing can be used for large scale areas such as pavements and roads and in combination with the use of acetic acid spraying can be a very effective alternative.

- High pressure hot water treatments can be particularly effective and also have other uses such as chewing gum, moss and grime removal.
- Electronic control systems that kill stems and roots instantly and are particularly suited to dealing with invasive species are also available.

What are other Town and Parish Councils doing?
During investigations for this report the Deputy Clerk has spoken with the Town Clerk at Glastonbury to find out their experiences of becoming a glyphosate free town.

In June 2015, Glastonbury Town Council became the first council in the UK to ban the use of glyphosate and switch to non-chemical methods of weed control in all areas used by the public. They invested in a second-hand hot foam machine for £6000 from Weedingtech, the company behind the 'Foamstream' technology.

The Clerk reported that there have been both positive and negative aspects to the scheme and that they had probably been over ambitious to completely ban glyphosate.

The main issue has been by banning the use of glyphosate Glastonbury Town Council took over weed control of the town from Mendip District Council, resulting in financial savings for Mendip with the reduction of services it is providing to the town council but having an adverse effect on the Town Councils budget by proving to be much more labour intensive than expected!

The clerk confirmed that Foamstream is a simple and effective system and the manufacturer of the technology 'Weedingtech' have been reliable and helpful. The second-hand machine is now in its fourth season and performing well.

The main considerations of using Foamstream are:
- Increased workload
- Initial layout costs, Vehicle suitable to carry Foamstream technology, purchase of Foamstream equipment and materials, labour.
- Labour intensive, Foamstream machine is carried on the back of a vehicle and operated by a diesel engine. The vehicle is then driven slowly with an operative utilising the lance to administer the hot foam. (Environmentally you are running two diesel engines!)
- Glastonbury TC estimates their running cost for administering Foamstream is in the region of £5000 to £6000 per annum.

The Clerk further reported weed control in Glastonbury has now been divided into zones

Town Centre and tourist areas.	Every six weeks.
Residential areas closest to tourist areas.	Twice a year.
Industrial estates & other residential areas.	Not scheduled – only if they can get there.

Other Councils
- Hammersmith & Fulham Council banned the use of glyphosate in its public space throughout its borough.
- Frome Town Council has, until further notice, agreed an immediate ban on the use of glyphosate and is discussing a town wide ban of glyphosate in all public spaces with Mendip District Council & Somerset County Council.

- Bristol has been experimenting with alternatives. The city council ran a 12 month glyphosate-free weed treatment pilot in one area where they compared the effectiveness of acetic acid (vinegar) to glyphosate based herbicides. Results proved that vinegar successfully killed the weeds but was not a cost effective way of controlling weeds.
- In May 2017, Lewes District Council voted unanimously to stop the use of all pesticides in public parks and green spaces following a successful campaign set up by local residents. The Council's contractor has invested in a hot foam weed control system which has replaced the use of herbicides.
- In early 2017, Wadebridge became the first town in Cornwall to go pesticide free, opting for hot foam as the most effective alternative. Cornwall is currently developing a County Pollinator Action Plan which involves a range of actions to better protect bees.
- In June 2016, Hammersmith & Fulham became the first London Borough to go pesticide-free, choosing to adopt a hot foam weed control system.

Cost is an important factor when considering whether to ban glyphosate. Bristol noted the cost of using vinegar to control weeds was 'prohibitive'. Although the volume likely to be used by the Town Council in comparison to a city is much lower.

Several of the above Councils are using Foamstream; herbicide free weed control solution that harnesses the power of thermal technology. It controls weeds using a precise application of hot water insulated by a biodegradable foam.

Heat is applied to the weed in the form of hot water and foam. The foam acts as a thermal blanket, keeping the heat on the weed at the correct temperature long enough to kill it or sufficiently damage the weed. Surrounding seeds and spores are sterilised reducing future regrowth. Foamstream can also be used on:

- Moss and algae control
- Gum & Graffiti removal
- Urban Cleaning
- Sanitisation
- General cleaning applications

Equipment
During the implementation of the Lengthsman project the Town Council purchased a Total droplet control applicator (TDCA) for the targeted application of Nomix Dual. Investigation is required to ascertain whether this equipment can be used to apply alternative homemade solutions.

The Town Council has recently appointed a new part time Lengthsman and at the time of writing this report is in the process of appointing a second part time employee to create a full-time equivalent role.

Given the above information the Town Council should now consider its method of weed removal prior to investing in any Herbicide application training for its new personnel or purchasing any further materials.

Cost of training and materials.
*Cost of herbicide is based on the amount of herbicide purchased between April and August 2018 (Herbicide is not used during the winter months or periods of wet weather).

**Cost of training is based on the current number of staff (2) who will require training.

Training	Cost per item	Total Cost
City & Guilds safe handling and application of pesticides (PA1 and PA6a) It is recommended a refresher course is undertaken 3 – 5 years	**£435 per candidate	£870
Materials		
Nomix Dual 5 litre	*£104.30 +VAT	£521.50
	Total	**£1,391.50**

Allotments
The Town Council allotment tenancy states 'the tenant is to use their best endeavours to garden organically and encourage biodiversity. On those sites designated as Organic, such practices are mandatory. The use of pesticides and insecticides must be kept to an absolute minimum and tenants must ensure that they are not left unattended at any time' it further states 'If using pesticides and insecticides, the tenant must take all reasonable care to ensure that wildlife and adjoining plots , hedges and crops are not adversely affected'.

If the Town Council opts to become a Glyphosate free town then consideration should be given to banning Glyphosate on all Town Council allotments. Glastonbury Town Council has not banned the use of pesticides on its allotments due to it being difficult to enforce.

Stoney Park have confirmed they permit the use pesticides on their site. During their last AGM a member proposed the ban of pesticides which was not supported (2 vote to 16 against)

Recommendation
That the Community Services Committee recommend to Full Council that the Town Council:

- Agrees to delay training the lengthsmen on the use of Pesticides and discusses a town wide ban in all public spaces with Torbay Council and TOR2.
- Further investigates becoming a Pesticide free town.