

# ECONOMIC IMPACT OF A GLYPHOSATE BAN

## IMPACT ON THE RAIL NETWORK

Glyphosate is a key tool for weed control on the UK's rail network. Its broad-spectrum effectiveness, and ease of application makes it well suited for use on Britain's busy railways, where speed is crucial in ensuring network activity is not limited, and high standards of track maintenance and safety are paramount. In addition to allowing trains to operate, a thorough weed control programme is required to allow the condition of the track to be monitored. Network Rail utilises cameras mounted under trains to automatically detect track faults and target maintenance. This method of inspection has no impact on network operations. However, if weeds are allowed to grow this automated fault detection system cannot operate, leaving no option but to rely on manual inspections, involving work crews on the track, leading to safety concerns and disruption.

The foundation of the rail network's weed control programme is the application of herbicides, principally glyphosate, from specially adapted "spray trains". These trains can operate throughout the day without hindering network operations. Moreover, they can do so on a cost-effective basis—our research indicates such treatment costs around £360 per mile<sup>1</sup>—and can access nearly all the UK's 19,500 miles of track every year. Glyphosate is also used to manage weeds on the one percent of the network that cannot be reached by spray trains, however for these areas (typically around stations) it is applied by backpack sprayer.

Given the importance of weed management to the safe operation of the UK's railways, a ban on glyphosate would be a challenge to the network's maintenance and require costly alternative strategies to be developed. The lineside managers at Network Rail and weed control contractors we have spoken to during this study have indicated that there is no chemical alternative that can be substituted for glyphosate if a ban were to occur. Indeed, they reported that alternative chemicals, such as acetic acid, which can be used as herbicides elsewhere in place of glyphosate, are not suitable for train tracks due to the damage they can inflict on the tracks themselves. Based on our discussions with industry experts at Network Rail, the only existing options available for weed control involve the physical removal of weeds, and can be narrowed down to two choices.

The first is for an expansion of the network's ballast cleaning programme. Ballast cleaning is primarily used for track renovation, but it also removes all vegetation growth on the tracks, so it could be used for weed control. However, cleaning the ballast is a slow and costly process, with work only able to be

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<sup>1</sup> During our research, we spoke to both Network Rail and contractors providing weed control services on the UK's rail network.

conducted at night or with a full closure of the line and, according to Network Rail, costing £750,000 per mile. Network Rail estimates that it currently undertakes ballast cleaning on 0.5 percent of the rail network annually. In the event of a failure to renew the glyphosate license, Network Rail projects that it would double the amount of ballast cleaning on the network—to one percent of the total.

Weed control would also be required on the rest of the network, and if glyphosate was unavailable Network Rail would also need to deploy manual weeding. This would involve employing teams of workers to walk the tracks and hand pull weeds. Although this low-tech option is relatively low cost compared to ballast cleaning, it is still three-times more expensive—at approximately £1,000 per mile—than the current herbicide-based system.

The annual cost of this glyphosate-free weed control programme would be nearly £85.5 million more than the current glyphosate-based programme. If the cost was directly passed on to passengers it would translate to a fare increase of 21 pence for every 100 miles travelled by a passenger using the railways and would represent a fare increase of 0.9 percent on those paid in 2015/16.<sup>2</sup> To put this into context, train operating companies are permitted to increase fares by an average of 3.6 percent in 2018.

**Fig. 1: Cost of alternative weed control programme**

Method	Ave cost per mile	Share of network treated (%)	Miles treated	Cost (£)
Current glyphosate-based programme	£360*	100	19,500	£7,020,000
<b>Alternative programme</b>				
Ballast cleaning	£750,000*	0.5#	97.5	£73,125,000
Manual weeding by work crews	£1,000*	99§	19,305	£19,305,000
Total cost				£92,430,000
<b>Additional cost (total less spending on current programme)</b>				<b>£85,410,000</b>

\*Source Network Rail and weed control contractors

#From discussions with Network Rail

§The remaining 0.5 percent of the network would be treated under Network Rail's current ballast cleaning programme

But the impact of a ban on glyphosate would not be limited to fare increases. The alternative weed control programme would introduce significant numbers of workers into close proximity to high-speed trains, raising critical safety concerns, generating further costs and timetable disruption as train speeds and frequency are limited near work crews.

It is clear that there is no direct alternative to a herbicide-based weed management system using glyphosate on the UK's rail infrastructure. Our analysis shows that a failure to renew glyphosate's license would lead to significant costs for the rail industry and its users, and raise safety concerns.

<sup>2</sup> According to the Department for Transport, UK passengers travelled 40.4 billion miles on UK trains and paid a total of £9.2 billion in fares (including season tickets) in 2015/16. Therefore, the average fare for 100 miles was £22.78.

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