

Vegetation control agent (VC)

Railway tracks, roads, and other types of infrastructures must be vegetation-free for safety and operational requirements. Several well-known methods to prevent and treat vegetation include biological, mechanical, and electro-thermal processes. The standard market solution to prevent and treat vegetation on railway tracks is the use of soil herbicides and leaf herbicides. Glyphosate-based materials such as **Roundup and Dominator Ultra** were the most efficient and cost-effective solutions for decades. These methods are rapid, efficient, cost-effective, and straightforward to use. However, recently, because of the environmental impacts and resistance of some of the plants, it was decided to stop using Glyphosate-based materials in the EU countries. Therefore, new environmentally friendly, simple to apply, efficient, and cost-effective non-glyphosate herbicides that can be applied with the existing spaying equipment are in great need on the market for vegetation control.

We propose herewith a new technique for vegetation control. The technology is based on spraying a solution of a mixture of inorganic salts named VC. The salts penetrate the plant stem (absorption by the plant) and, in the beginning, change the ion balance inside the plant. The second stage dehydrates the plant (water absorption) and dries the plant and the roots, as shown in Figures 1 and 2. The VC product works as a **non-selective contact herbicide-like material** or "total weed-killer" that destroys all types of plant material with which they come in contact in a non-selective manner. Our technology has two impacts on the plants. The immediate impact of non-selective treatment of the vegetation and the persistent effect prevents the plants' new grooving for an extended period (depending on the weather and geographic location).

During the series of tests under laboratory and field conditions and full-scale application, we proved that the solution **could treat glyphosate-resistant species in shorter times**. Moreover, under a third-party evaluation field test, we demonstrated that our material is **more efficient than well-known pelargonic acid-based brands and even some of the systematic herbicides**. In

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In addition to this, our VC material is significantly cheaper than these materials. Moreover, under a third-party evaluation field test, we proved that the solution is compatible, does not damage spraying trains and equipment, and is safe for railway infrastructure, sleepers, and roads.

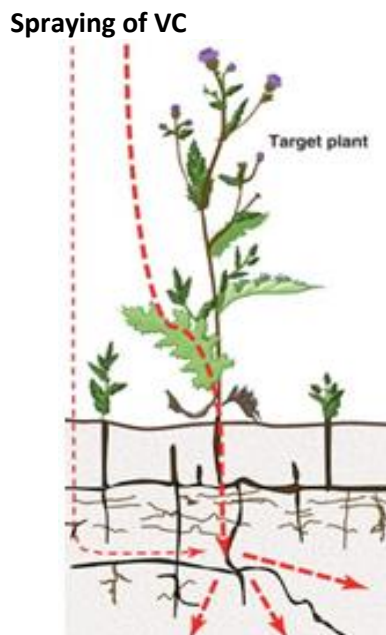


Figure 1.

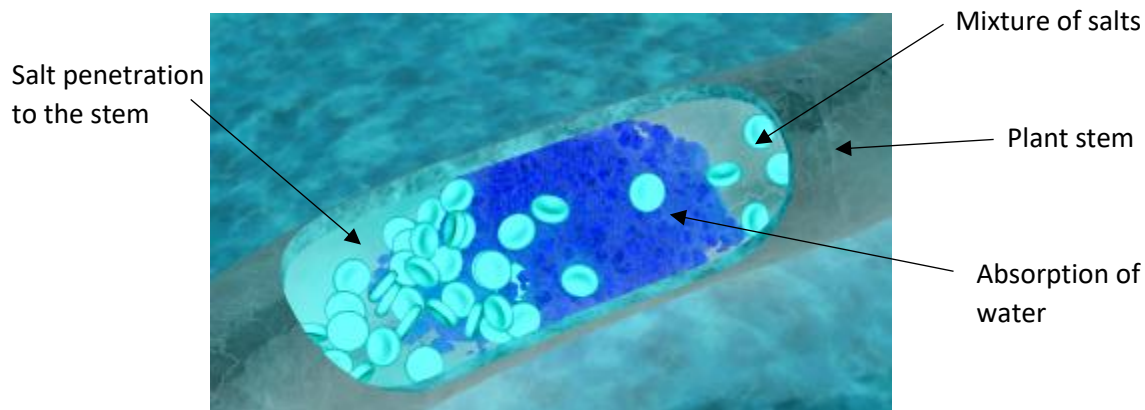


Figure 2

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