



SWEEP: Sustainable Weed Control on Pavements



The SWEEP concept

Current herbicide use on pavements (e.g. roads, side walks) adversely affects the quality of surface waters. Herbicide

runoff from pavements is much higher (a factor 10 or more) than runoff from agricultural fields and this runoff contributes more than proportional to the costs of drinking water production. The SWEEP concept aims at a substantial reduction of herbicide runoff from pavements. SWEEP consists of a decision support system that translates information on weed prevention and weed control methods into simple guidelines for sustainable weed management, i.e. a cost-effective, environmentally-friendly and socially acceptable system. The concept is implemented in practice in urban and industrial sites, in the catchment areas of Rhine and Meuse. A major part of the Dutch are dependent on drinking water production from these rivers.

The SWEEP concept consists of three shortlists with information and practical guidelines for policy makers and managers dealing with the actual weed control on pavements. The guidelines enable clear arrangements to be made about the control methods and herbicides (mainly glyphosate) that are to be used and –if applicable- herbicide use registration. SWEEP is financially supported by the EU life program.

Results

Field studies have shown that weed control under SWEEP guidelines is effective, also in case of high weed

pressure such as the wet season of 2004. On average, two control rounds were conducted per season. Brushing, sweeping, burning or mowing was carried out in cases that did not allow herbicide use according to the SWEEP guidelines.

Application of SWEEP guidelines significantly reduced herbicide runoff (ca factor 10). The ecological threshold level in surface waters was not exceeded. In some samples, concentrations were slightly higher than the drinking water criterion given in the EU Water Framework Directive. SWEEP contains additional guidelines for pavements near surface waters that have to be protected according to the EU water phrame work directive. This means: no herbicide use on pavements near these waters.

The extra costs of weed control under SWEEP ranged from virtually no increase to a maximum increase of 30%. This is in particular caused by the use of different techniques at emission-sensitive places and a smaller number of days on which work could be done. For comparison: completely non-chemical weed control is four to ten times more expensive than standard chemical control.

The SWEEP guidelines have been translated into a tiered certification scheme with professional standards and different levels of pesticide use. In the summer 2005, the first certified municipalities are expected. The system will contribute to cost effective weed control on pavements and meeting environmental objectives in the Netherlands and other EU countries.

The new weed control concept SWEEP is developed by Wageningen University and Research Centre (Plant Research International), VEWIN (drinking water production), Hollandse Delta (water board) and Monsanto Europe (producer of herbicides) in cooperation with several Dutch municipalities (e.g. Alblasserdam, Hendrik-Ido-Ambacht, Leiden, Dordrecht and Papendrecht).

Parameter	Result
Effectiveness weed control during the season reasonable	good to
Quality surface water: ecological	No exceedances
Mean glyphosate concentrations at discharge points	threshold
Exceedances detection limit (0.5 µg l ⁻¹) glyphosate	0.4 – 0.8 µg l ⁻¹ 1 in 5 samples
Costs of SWEEP	€ 0.05 – 0.15 m ⁻²

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