REMOVAL OF PESTICIDE WASTES ON FARMS VERTICAL GREEN BIOBED – CASE STUDY

Problem – Challenge

More and more farmers, wine producers, greenhouse users and golf course owners are facing environmental requirements to treat pesticides effluents (generated by the preparation of phytosanitary treatments and the washing of soil pulverizers), and avoid their release in natural and environmentally sensitive surface water.

It is often not possible or practical to rinse the spraying tank in the field in a complete way. Thus, pesticide remainings in the tank end up washed out in the courtyard, then flow in drainage systems and pollute natural water streams.

Different systems exist to treat those effluents, but either they involve more chemicals (flocculation) or need considerable maintenance (horizontal biobeds). Current biobeds are gaining popularity, but show significant weaknesses: they get easily waterlogged and require large surfaces.

Solution

The Soil and substrate Laboratory of Hepia, an academic institution part of HES-SO in Geneva found a solution to the common weaknesses of biobeds, by developing the vertical green biobed or "VG BiobedTM". The VG BiobedTM looks like a regular wall covered entirely by plants and as such is able to degrade larger quantities of effluents than horizontal biobeds. They can typically degrade 6m3/m2/year compared to 0.6m3/m2/year for classical biobeds. VG Biobeds don't get waterlogged, they need little maintenance and bring an aesthetic touch to the landscape, which makes them particularly appropriate for public parks and golf courses.

A Swiss and a European patent were filed, protecting the intrinsic advantages of the technology. A spin-off from Hepia, EcaVert, was launched which is commercializing the technology in Switzerland under license: www.ecavert.ch.