

Controlled Release Formulations for Anionic Herbicides (Yissum) code: 6-2006-232

<u>Baruch Rubin</u>, HUJI, Faculty of Agricultural, Food and Environmental Quality Sciences, Robert H. Smith Institute of Plant Sciences and Genetics in Agriculture

<u>Yael Mishael</u>, HUJI, Faculty of Agricultural, Food and Environmental Quality Sciences, Soil and Water Sciences

<u>Shlomo Nir</u>, HUJI, Faculty of Agricultural, Food and Environmental Quality Sciences, Soil and Water Sciences

Reduce soil and water contamination

Categories	Agriculture, pest control/herbicides, formulations
Development Stage	Ongoing research
Patent Status	US patent 7,030,062, EP patent 1363491, Israel Patent156454
Market Size	Sales of controlled release materials will reach \$787 million in 2012 of which agriculture has by far the largest market share, reaching \$259 million, almost 33% of the total market.

Highlights

- High concentrations of herbicides are used to compensate for loss due to leaching and surface migration
- Slow-release and controlled-release formulations are specifically designed for hydrophobic herbicides – not suitable for anionic herbicides such as sulfonylureas, imidazolinones and triazolopyrimidines

Our Innovation

Herbicides that are negatively charged at pH6 or above are incorporated into positively charged micelles or vesicles. The micelle or vesicle is adsorbed onto negatively-charged clay mineral, such as smectite or sepiolite.

Key Features

- The herbicide is released slowly, reducing leaching to deeper layers and contamination of soil and water.
- The herbicide is delivered close to its target, enhancing efficiency and reducing concentration required
- The new formulation is also suitable for hydrophobic herbicides

Development Milestones

• Seeking cooperation for continued research and commercialization

The Opportunity

ITTN - Israel Tech Transfer Network

Yeda Research & Development Co. Ltd, P.O Box 95, Rehovot 7610002, Israel, Telephone: 972-8-9470617, Fax: 972-8-9470739



- The worldwide agricultural and non-crop (home and garden markets and usage in industrial, governmental and commercial use) herbicide market is valued at more than \$15 billion.
- In terms of consumption, the U.S. agricultural and noncrop herbicide market makes up 35% of the value of the world market and 25% of the volume of the world market.

Contact for more information:

Michal Levy 🖾, VP Head of Bus. Dev. Agri-Tech, Vet. & Environment, +972-2-6586635

Yissum Research Development Company of the Hebrew University of Jerusalem Hi-Tech Park, Edmond J. Safra Campus, Givat-Ram, Jerusalem P.O. Box 39135, Jerusalem 91390 Israel Telephone: 972-2-658-6688, Fax: 972-2-658-6689