AGRICULTURE TECHNOLOGY OFFER

Biohydrogel (A solution for droughts and saving irrigation water)

Presenting a biobased biohydrogel produced using green chemistry technologies, that is able to store exceptional high amounts of water (up to 1600 % w/w) and release it to plants over long periods of time and also act as a carrier system of agrochemicals (pesticides, herbizides, antimicrobials). Biohydrogel will enable farmers across the world, horticulturists, fruit farmers, wine growers, florists, home and garden ornamental plant lovers to effectively and efficiently manage water and agrochemicals, boost plant growth and yield. In addition, biohydrogel is able to convert agriculture unproductive to productive soils and mitigate challenges of droughts and erratic water supplies

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REFERENCE:
2018-08

AVAILABLE FOR:
R&D cooperation
License agreement

KEYWORDS/ APPLICATIONS:
- Water storage
- Agrochemical carrier system
- Prevent plant drought stress

DEVELOPMENT STATUS:
Prototype

IPR:
A50053/2019 filed 01/2019

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BACKGROUND

Biohydrogel is primarily driven by the urgent need to address current devastating effects of global warming on agriculture (i.e. increasing erratic rainfall patterns, severe droughts, desertification and loss of arable land). Biohydrogel is also inspired by the need to help farmers and plant growers effectively and efficiently manage water. In addition, Biohydrogel´s ability to trap agrochemicals, has the potential to reduce current fertilizer, pesticide and herbicide losses of up to 50%, 99.9% and 95%, respectively, thereby reducing production costs, environmental pollution while at the same time boosting crop yield.

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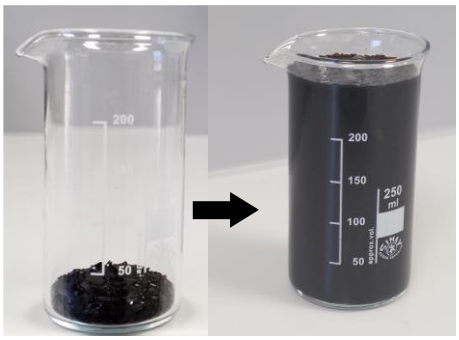
Process for producing a variety of functional biohydrogels. Given the urgent need of the product, we are interested in producers who are committed to bringing biohydrogel to the consumer in the shortest possible time.

WHAT BIOHYDROGEL CAN DO?

- Captures and stores up to 1 600 % w/w rain or irrigation water thereby;
  - ✓ decreasing watering/irrigating frequency
  - ✓ enabling crops overcome droughts periods in open fields
  - ✓ enabling farmers/plant growers save irrigation water
  - ✓ help farmers grow crops using less water
- Traps and reduces loss of agrochemicals (fertilizers, pesticides or herbicides)
- Decreases agricultural costs and prevent environmental pollution
- Increases agriculture yields
- Act as soil conditioner improving soil fertility (permeability, density, structure, texture and humus content)
- Convert agriculture unfit soils e.g. sandy soils into agriculture productive soils
- Helps reclaim degraded soils and reduce soil erosion
- Ultimately reduces run-off, increases seepage that may increase ground water

APPLICATION

Biohydrogel can be applied wet or dry, granulated or in powder form, in open fields or artificial agricultural systems



15 g of biohydrogel was able to absorb and increase in volume filling a 250 ml beaker increasing 1600 %.

Plant growth trials demonstrating ability of soils mixed with 4 % w/v biohydrogel (**B**) to protect plants from water stress over 1 month from onset of stress compared to plants in soils only (**A**) at average temperatures between 22 and 30 °C

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