



Abstract

# Formulation of Biocontrol Agents: A Patent Landscape Analysis <sup>†</sup>

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**Abstract:** This form of patent analysis includes information that could be used as a reference by researchers in the fields of agriculture and plants, as well as those interested particularly in biological control (biocontrol) agents for agriculture. The state has been reviewed by introducing what has been patented concerning biocontrol agents. During a search, 2260 patent documents have been found. The United States was ranked first with 658 patent documents; 2015 was the year with the maximum number of patent documents (277). The patent classification codes reveal that most inventions are intended for biocides, pest repellants or attractants, or plant growth regulators containing microorganisms, viruses, microbial fungi, animals, or substances produced by or obtained from microorganisms, viruses, microbial fungi, or animals; as well as biocidal, pest repellent, pest attractant, or the plant growth regulatory activity of chemical compounds or preparations, such as insecticides and fungicides. Knowledge clusters and expert driving factors of this patent analysis indicate that research and development are based on the formulation of biocontrol agents that are concentrated in most patents.

**Keywords:** biocontrol agents; formulation; patent; intellectual property; innovation



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