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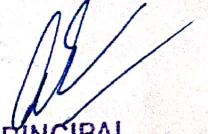
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(54) Title of the Invention : "NANOTECHNOLOGY SUITABLE FOR AGRICULTURE: PREPARATION OF A NANO ENCAPSULATED PESTICIDE FORMULATION"

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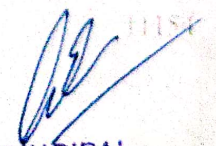
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(57) Summary of the Invention
 The present invention relates to a nanoencapsulated pesticide formulation suitable for agriculture. The invention provides a method for the preparation of a nanoencapsulated pesticide formulation. The formulation comprises a pesticide active ingredient (AI) and a carrier. The AI is encapsulated in a nanoscale carrier, which is then dispersed in a suitable medium. The resulting formulation is stable and effective against a wide range of pests and diseases. The invention also provides a method for the application of the nanoencapsulated pesticide formulation to crops. The formulation is applied to the crops in a manner that allows the AI to be released slowly and effectively. The invention is particularly suitable for the control of pests and diseases in agriculture. The invention provides a method for the preparation of a nanoencapsulated pesticide formulation. The formulation comprises a pesticide active ingredient (AI) and a carrier. The AI is encapsulated in a nanoscale carrier, which is then dispersed in a suitable medium. The resulting formulation is stable and effective against a wide range of pests and diseases. The invention also provides a method for the application of the nanoencapsulated pesticide formulation to crops. The formulation is applied to the crops in a manner that allows the AI to be released slowly and effectively. The invention is particularly suitable for the control of pests and diseases in agriculture.

(57) Abstract :

The incorporation of nanotechnology as a means for nanopesticides is in the early stage of development. The main idea behind this incorporation is to lower the indiscriminate use of conventional pesticides to be in line with safe environmental applications. The focus of disclosing the present invention is to developed the nanoencapsulated pesticide formulation of both chemically-related pesticides (Organophosphate, Carbamate, Organochlorine insecticides, Pyrethroid, Sulfonylurea herbicides) or biopesticides that has slow releasing properties with enhanced solubility, permeability, and stability. These properties are mainly achieved through either protecting the encapsulated active ingredients (AIs) from premature degradation under harsh environmental conditions or increasing their pest control efficacy for a longer period. Nanoencapsulated pesticide formulation is able to reduce the dosage of pesticides and human exposure to them, which is environmentally friendly for crop protection.

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Department of microbiology

Indian Formula Patent(IPR)

Government of India

*Title- *Nanotechnology for sustainable agriculture-preparation of a nano encapsulated pesticide formulation*

Abstract

It is well known that insect pests are the predominant ones in the agricultural fields and also in its products, thus NPs may have key role in the control of insect pests and host pathogens. The recent development of a nanoencapsulated pesticide formulation has slow releasing properties with enhanced solubility, specificity, permeability and stability. These assets are mainly achieved through either protecting the encapsulated active ingredients from premature degradation or increasing their pest control efficacy for a longer period. Formulation of nanoencapsulated pesticides led to reduce the dosage of pesticides and human beings exposure to them which is environmentally friendly for crop protection. In this context, the bio-encapsulation process has taken prominence in particular as an ecofriendly method for pest control while reducing the pesticide load in the environment considerably. By taking into consideration, here we are presenting an method regarding the development of nanoencapsulated pesticides in sustainable agriculture and highlight some challenges to be addressed in order to develop efficient nano-carrier systems that may arise as an alternative for conventional pesticide application. So, development of non-toxic and promising pesticide delivery systems for increasing global food production while reducing the negative environmental impacts to ecosystem.

20 years' validity and Patent will publish within 3 months and grant certificate will give within 12to18 months

Individual registration as inventor required

Rs. 31,540/- per registration

(To reserved 20 years of inventor rights)

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