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DESCRIPTION FR948667A

Products for crop protection, insect control, disinfection, and other uses, applicable by electrostatic dusting and preparation methods

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[0001]

MINISTRY OF INDUSTRY AND COMMERCE.

[0002]

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[0003]

Inseetieidea powders acting by contact must adhere strongly to the body of the insects.

The problem of adhesion also arises when it comes to coating any objects, in order to disinfect them, color them, etc. It is known to increase the adhesion of powders using suitable adhesives, acting because of "their plasticity, or because they form a viscous solution with water. Unfortunately, regardless of the quality of the products used, adhesion is limited, and in particular insects manage to get rid of them, by sweeping them away with their limbs, often equipped with brushes and other special organs. This explains the limited effect of insecticidal powders on certain insects, for example Aphids, which are nevertheless sensitive to insecticides applied in liquid form. The present invention makes it possible to ensure the adhesion of powders, in particular on the body of insects, by using the phenomenon of electrostatic attraction.

It consists of projecting onto insects, or "on various objects, powders suitably prepared, so that they can be electrified using known devices, and that they can retain their charge for a long time, after having made contact with the object to be covered.

[0004]

It has been established that, in order to meet this condition, the substances used must have a very high specific resistance, of at least 10 ohms-centimeter.

Furthermore, this resistivity must be preserved in the presence of humidity, which requires a complete absence of affinity for water. A powder prepared under these conditions, deposited after electrification, in a non-contiguous layer, on a conductive surface, will retain for several hours, and even several days, a charge greater than 10% of its initial charge. Insects affected by such powders 45 cannot get rid of them with great difficulty: indeed, the charged particles remain constantly attracted to the objects they come into contact with, and they only leave a given point to stick to a neighboring point 50, as if they were elastically attached to the objects. The preparation of products conforming to the invention can be carried out according to the following methods: 55.

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° The active substance is incorporated by melting, or by any other means, into a substance of high resistivity, then the whole is reduced to a fine powder. Various natural or artificial resins, as well as certain corn- 60.

[0005]

Price of the booklet: 25 francs.

[0006]

[948.667]— 2 organic materials are suitable for such applications. Insulating products to be incorporated must be chosen so as not to significantly alter the insulating qualities of the support.

These are Derria extracts, nitrated and chlorinated phenols, dichloro diphen-, nyitriehloretliane, iiseachlorocyclolixane, naphthalene, and various synthetic organic insecticides; (0 2° The active substance, insulating or conductive, is reduced to powder, and simply mixed with an insulating substance, itself in powder, and which, once charged, will serve as a link between the object to be powdered on one side and the active product on the other.

The bond between the active product and the support is particularly good if both components have a tendency to electrify each other by friction. If, for example, powdered sulfur, or any other product with high specific resistance, is mixed with an insecticide such as Derria extract or DDT, the sulfur, after electronization, attaches itself to the body of the insects, and at the same time retains the insecticide product. To obtain a good result, however, a large excess of sulfur is required, and "in addition, neutral substances, which could mobilize some of the attractive power of sulfur, should not be introduced into the mixture. In particular, diluents usually used in such mixtures, such as (talc, clay, chalk, etc.) should be avoided. We will replace the vegetable powders with very high-quality eoncen-35 extracts. The proportion of insecticide should preferably be less than 5% of the electrifiable product; 3° Common insecticide carriers, such as infusoria earth, kaolin, talc, calcium

carbonate, ochres, etc., do not have sufficient resistivity, particularly because of their ability to retain water.

According to the invention, this defect 45 will be corrected by dehydrating these bodies, and they will be made insensitive to moisture. For this purpose, they will be heated by incorporating a suitable quantity of an insulating and hydro-resistant product, such as paraffin, rosin, chlorinated naphthalene, etc. This gives them the power to retain electrical charges after coming into contact with the objects to be powdered, which is in accordance with the invention.

[0007]

— We melt together: Hardened resin..... 95 parts Dinitroerësol.....

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5 — Once cooled, the mixture is ground finely. This yields an insulating powder that retains electrical charges well and possesses strong insecticidal and fungicidal properties. The following mixture is prepared: Pure ground washed sulfur___ 98 parts 65 Extract of Derria.....

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— When precipitated on the plants using an electric duster, this mixture adheres strongly.
— The following mixture is heated to 130°C: Infusoria earth..... 80 parts Chlorinated

naphthalene..... 15 — Dichlorodiphenyltrichloroethane (DDT)..... 5 —70 Chlorinated naphthalene, which could be replaced by paraffin, gives the earth of infusoria the power to retain electrical charges, and thus ensures adhesion to powdered objects. This result is not obtained with DDT-based insecticides using vulgar fillers such as silica, talc, clay.

[0008]

EESUilE 1° The invention relates to products for crop protection, insect control, disinfection, or any other uses that can be employed by electrostatic dusting, as well as to methods of preparing these products.90 These are particularly characterized by the fact that they are in the form of water-repellent powders with high specific resistances capable of receiving electrical charges by means of suitable devices 95 and of retaining a significant portion of these charges after contacting the objects to be dusted; 2° The active products, fungicides or insecticides, are treated by washing with water or 100 with appropriate solvents, or impregnated with insulating substances, in order to improve the surface condition, with a view to better retention of the charges, or to facilitate electrification by friction; 3° .

Preparation process for powders according to 1° consisting of intimately mixing an insecticidal or fungicidal powder with a water-repellent carrier powder of high specific resistance; 4° The preparation uses substances with a resistivity greater than 10 ohms-centimeter; 5° The insecticidal substance has been previously melted with the insulating product or bonded to it, then the whole is impregnated with insulating and water-repellent substances, such as: infusoria earth, kaolin, talc, calcium carbonate, ochres, by impregnating them with insulating and water-repellent substances, such as: paraffin, rosin, chlorinated naphthalene; 9° The insecticidal or fungicidal product is taken from the following products or in mixture: Derria extracts; Nitro and chlorinated phenols; Dichlorodiphenyltrichloroethane; Hexachlorocyclohexane; Naphthalene; 10° The carrier product is one of the following 5 reduced to a fine powder;- bodies or a mixture of several of them: 35 Sulfur; Artificial or natural resins.

Georges TRDFFAUT and Pierre HAMPE. By proxy to Office Josse.

[0009]

6° The insecticidal substance is attached to the insulating grains by electrical attraction; 7° The insecticidal substance is electrified by friction in the opposite direction to the diluent substance; 8° Common supports such as these are improved.

[0010]

For the sale of booklets, contact the National Empire, 27, rue de la Convention, -Paris (15").
