

Intelligent Insect Trap Lamp

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Abstract: China is a large agricultural country, with the climate changeable, pests are also more and more on the country's agriculture has a certain impact. At present, most farmers in agriculture use pesticides to exterminate insects, but when pesticides are used in excess, pests will be in a period of time - within the mutation of drug resistance, farmers will increase the amount of pesticide use, which forms a vicious circle, the social and ecological environment brought about by the hazards and even the human health of the major safety hazards. With a new method of extermination instead of pesticides, quickly change the original way of extermination has become a top priority. The "Smart Pest Light" takes into account the use of energy-saving, safe and reliable energy and harmless pest control methods. Widely used in agricultural cultivation can help reduce pesticide residues in fruits and vegetables, reduce the increase of pest resistance, and contribute to the green development of agricultural production.

Keywords: Intelligent agriculture, Insect-trap lamp.

1. State Policies on Agricultural Development

Since 1982, the Central Committee of the Communist Party of China (CPC) has issued a series of "No. 1 Documents" to address the issue of the "Three Rural Issues", which is an important programme document for China's agricultural development. The "No.1 Document" of the Central Committee is an important programme document for China's agricultural development, and the "No.1 Document" of the Central Committee from 2004 to 2015 has continued and developed the agricultural policies of the previous "No.1 Document". Agricultural policies. In terms of financial support policies for agriculture, the implementation of such policies as direct grain subsidies, seed subsidies, agricultural machinery purchase subsidies, comprehensive agricultural subsidies and so on has achieved effective results; agricultural tax reduction and exemption policies have had an important impact on agricultural development; subsidies for soil testing and formula fertiliser application, scientific and technological funding for household projects, special funds for small-scale farmland water conservancy construction, and ecological benefit compensation and other agricultural infrastructure capital input policies have played a huge role in promoting the development of agriculture. The basic rural business system has been promoted. In terms of policies to promote the basic rural management system, Document No. 1 has promoted the development of the household contract responsibility system, accelerated the transfer of rural land and the scale of agricultural land production, and strengthened the protection of arable land, thus guaranteeing national food security and the effective supply of major agricultural products, ensuring the effective protection of arable land in the countryside, and developing large-scale rural land management. The development of large-scale rural land management.

The Central Government's "Document No. 1", which establishes policies for the development of modern agriculture, including the development of farmland water conservancy facilities, the improvement of agricultural industrialisation and the logistics system for agricultural

products, and the improvement of the details of the policies for new farmers and agricultural science and technology, has promoted the development of agriculture and achieved results. The study of the Central Government's "Document No. 1" and agricultural development has provided us with important experiences and insights. These include: combining Marxism with China's national conditions is a prerequisite for agricultural development; mobilising the three-fold enthusiasm of the central government, local authorities and farmers is an important condition for agricultural development; national policy guidance is an important factor in agricultural development; institutional changes suited to the realities of agricultural development are the basis of agricultural development; and modernisation of agriculture is an inevitable prospect for promoting agricultural development.

2. The Current Situation of The Development of Trapping Lamps

Light trapping is an important means of physical pest control. In recent years, with the concept of "green plant protection" put forward, the number of insecticide lamps and the scale of the rapid development of production enterprises, insecticide lamps tend to be more and more diversified and complex products. This product to the Internet and the Internet of Things with the information collection pathway, and then with the insecticide lamp for efficient killing, for the insecticide lamp products and enterprise distribution, product features, market prices and other aspects of analysis, research and development.

At present, there are many types of insecticidal lamps, are widely used and representative of the main black light, high-pressure mercury lamps, frequency vibration automatic insecticidal lamps. Commonly used insect light source has electric lamps, oil lamps, and some direct use of light as a source of insect traps, and with the electronic science and technology, the rapid development of solar energy technology and its application, promoting the diversified development of insecticidal lamps, the emergence of LED automatic insecticidal lamps, solar automatic insecticidal lamps and other new energy-saving and efficient insecticidal lamps,

which are also widely used in agriculture, forestry, animal husbandry.

3. Product Introduction

Intelligent insect trapping lamp is based on the principle of intelligence, environmental protection and energy saving, and is applied in the field of modern agriculture to promote the development of agriculture, reduce the cost of agricultural production, reduce the pesticide residues on crops, protect the natural environment from pollution, and safeguard the health of human beings. Intelligent insect-catching lamps are installed with temperature sensors, humidity sensors, light-controlled switches, information feedback systems and infrared devices. The overall material used is fireproof and durable to adapt to all kinds of extreme weather outdoors. The power grid uses non-sticky conductive material.

4. Project Technology and Its Advantages

There are three main technologies used in this project:

(1) Sensing technology: Using sensors, infrared thermography and other technologies, information on the situation of pests is acquired and collected at the appropriate place at any time.

(2) Adjustment technology: According to the collected data, intelligently adjust the working time of the insect trapping lamp, the placement height, and the brightness of the black light, to achieve a more efficient extermination of insects.

(3) Processing technology: According to the characteristics of insects' phototropism, the light is used to lure the pests into the extermination range to kill them and then collect the dead bodies of the pests. The advantages of this product are mainly reflected in: solving the problems of insecticide, pollution and cost in pest control, adopting a safer, more environmentally friendly and lower cost green pest control technology. Under its support, tea plantations, orchards, vegetables and other planting bases can safely and securely develop green pollution-free planting and achieve the goal of increasing

production and efficiency.

5. Product Innovation

(1) Use infrared thermal camera and image processing to monitor the population density of pests, intelligently adjust the working time and work of the trapping lamp and the brightness of the black light to control the growth rate of the pests.

(2) Add humidity and temperature sensors to the device, and consider the impact of the environment on the activity and range of pests. The influence of the environment on the activity of the pests and the range of activities.

(3) Adopt solar power supply, energy saving and environmental protection. It solves the problem of power supply for insect trapping lamps in large agricultural fields. The power supply problem of the lamp is solved.

(4) The height of the insect trapping lamp can be intelligently adjusted, according to the different humidity of the insects flying at different heights.

According to the different flight height of insects under different humidity, the data detected by the humidity sensor can be analysed to adjust the placing height of the insect trapping lamp. The height of the lamp can be adjusted by analysing the data detected by the humidity sensor.

(5) The temperature sensor monitors the temperature of the environment where the insect trapping lamp is located, when the temperature is not within the normal survival temperature range of pests. When the temperature is not within the normal survival temperature range of the pests, the insect trapping lamp stops working.

References

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