

Pesticide Waste Management and Agricultural Environmental Protection

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ABSTRACT

With the rapid development of social economy, China's agricultural production and management level is constantly improving, but affected by the traditional development concept and mode, there are still some problems in pesticide waste management. This paper describes the current situation and challenges of pesticide waste management in China, and analyzes the important impact of pesticide waste management on agricultural environmental protection. Based on the basic requirements of agricultural environmental protection, this paper discusses the strategies of pesticide waste management from the perspectives of system construction, publicity and training, and technology optimization, hoping to provide help for the innovation of agricultural production management and the development of environmental protection in China.

Keywords: Pesticide waste, management, agricultural environmental protection

1. INTRODUCTION

In modern agricultural production activities, the application of pesticides is particularly important, which can effectively improve the yield and quality of crops. However, due to the influence of traditional technology and application concept, a lot of agricultural production personnel produce a lot of pesticide waste after using pesticides. Coupled with the lack of reasonable management of this kind of waste, it causes serious damage to the agricultural environment. The destruction of agricultural environment not only affects agriculture itself, but also is extremely unfavorable to the healthy development of the whole society. Therefore, in the modern advanced concept of sustainable development, further research on pesticide waste management and agricultural environmental protection is very necessary.

2. OVERVIEW OF PESTICIDE WASTE MANAGEMENT AND AGRICULTURAL ENVIRONMENTAL PROTECTION

Pesticide waste management is a process of scientific management and treatment based on the principles of environmental protection, ecological protection and human and animal life safety. Pesticide waste mainly includes all kinds of pesticide products that are out of date, counterfeit and shoddy, and are banned by use. All kinds of containers (plastic bags, barrels, spray

equipment, etc.) are contaminated with such products. Pesticide wastes are discarded randomly in the production site, rivers and lakes and people's living environment, which will cause serious harm. First of all, most of the waste pesticide packaging and waste gas tools are plastic products, and its impact on the ecological environment as plastic waste is self-evident. Secondly, pesticide wastes contain pesticide residues, which not only pollute soil and vegetation, but also pollute surface water and groundwater, causing serious harm to local ecology. In addition, pesticide waste is discarded in people's living environment, which will lead to the threat to people's health and even life safety [1]. It can be seen that pesticide waste management is not only related to people's own health and safety, but also affects the ecological environment. At the same time, it is also of great significance to promote the reform of modern agricultural production mode.

Agricultural environmental protection mainly refers to the protection of agricultural production environment and rural ecological environment. On the one hand, it can create a more healthy environment for agricultural production, including soil environment, biological environment and water environment, and promote the improvement of agricultural planting quality and yield. On the other hand, agricultural environmental protection is also an important part of modern ecological environmental protection. Due to the large area of

agricultural planting, it also involves many aspects such as regional soil environment, vegetation environment, biological environment, water environment, etc., so agricultural environmental protection is very important for the healthy and sustainable development of the whole society. Generally speaking, pesticide waste management is a very important link in agricultural environmental protection, and its core goal is to reduce or even eliminate the impact of pesticide waste on agricultural production environment, so as to make an important contribution to agricultural environmental protection.

3. STATUS AND PROBLEMS OF PESTICIDE WASTE MANAGEMENT AND AGRICULTURAL ENVIRONMENTAL PROTECTION

3.1. present situation

Since the reform and opening up, China's agricultural production has experienced the process from extensive to large-scale and intensive. In this process, the concept and mode of agricultural production are more and more advanced, and the use of related pesticide products is very important. However, with the continuous development of modern agricultural production technology concept, coupled with the accumulation of a large number of practical production management experience, there are also some problems in the process of using pesticides, and the management of pesticide waste is more prominent. In the modern agricultural production environment, the production of pesticide waste is inevitable, and the quality of management will directly determine the harm severity of this kind of waste [2]. However, there are some problems in the management of pesticide waste in many areas of China, which affect the work of agricultural environmental protection.

3.2. Problems and challenges

3.2.1. Lack of scientific management consciousness

Through the previous discussion, it can be found that the first treatment of agricultural waste is often agricultural production personnel, and in the current agricultural planting industry, individual farmers occupy the main proportion in the agricultural production group, and this part of the population generally lack of scientific understanding of pesticide waste management. For example, according to the field survey and analysis data of a certain place, more than 43% of the agricultural growers discarded the medicine bottles in the fields and surrounding rivers after using pesticides in the farmland. For the cleaning of pesticide applicators, 46.1% of them were directly washed by rivers, canals and lakes, and 39.1% and 13.5% of them were directly poured into the field

near the well. For the treatment of pesticide packaging bags, 71.2% of them were discarded randomly (in the field, in the forest, in the river, beside the road, etc.), 13.1% were discarded in the unified garbage can and garbage pool, and 3.5% were burned. It can be seen that the lack of hazard awareness and management awareness are the primary problems of contemporary pesticide waste management.

3.2.2. The guidance management system is not perfect

The system is the basic premise of the relevant management, but at present, the management of pesticide waste in some areas is in the initial stage, and the corresponding management system is not perfect. The main performance is that the lack of publicity and training system for agricultural planting personnel, inadequate publicity and poor training quality are the main reasons for the difficulties in pesticide waste management. Secondly, the relevant punishment measures are not perfect and the implementation is poor, which leads to the illegal behavior of agricultural planting personnel can not be stopped and punished in time. And the lack of incentive system, resulting in pesticide waste management staff have no enthusiasm for work, there is slack mood in the work, unable to better carry out the management work [3].

3.2.3. Lack of technical support

Nowadays, technology is the key to realize industrial transformation and innovation, and pesticide waste management and even agricultural environmental protection are facing the dilemma of lack of technology. First of all, the management of pesticide waste in the region is faced with a wide range of management, and the relevant technical detection and monitoring system is not perfect, which leads to high pressure and low work quality of management personnel. Secondly, there are still outdated pesticide products on the market in many areas, which are harmful to the ecological environment, leading to adverse effects on pesticide waste management and agricultural environmental protection. The lagging technology of pesticide products and the lack of alternative products for ecological and environmental protection lead to greater dependence on pesticides in relevant areas. A large amount of pesticide waste will naturally lead to a large number, which increases the difficulty of management. In addition, in order to reduce the impact on the agricultural production environment, we need to take relevant methods to deal with the pesticide waste. However, at present, there is no relevant technical support in the treatment of pesticide waste in some areas. Even if the concentration of pesticide waste is well done, it is impossible to carry out a higher level of harmless treatment.

4. INNOVATION STRATEGY OF PESTICIDE WASTE MANAGEMENT AND AGRICULTURAL ENVIRONMENTAL PROTECTION

4.1. Do a good job in the propaganda, guidance and training of agricultural producers

In the management of pesticide waste, whether facing individual farmers or intensive production enterprises, we need to strengthen the publicity and promotion of the concept of pesticide waste physics. Through regional broadcasting, slogan science popularization and collective training, agricultural producers can realize the harm of pesticide waste to production activities and even the ecological environment, and change their traditional ideas from consciousness. Strengthen the publicity of scientific drug use knowledge, guide agricultural producers to use pesticides scientifically, and do not rely on or abuse them. At the same time, through publicity and training, improve the scientific planting management ability of agricultural producers, so that they can reasonably purchase pesticides according to the plan, and avoid more pesticide waste. Finally, through training and guidance, agricultural producers should have the ability to deal with pesticide waste scientifically, such as knowing how to clean and maintain pesticide application tools scientifically, so as to reduce the damage and scrap of such tools on the basis of reducing pollution.

4.2. Building a scientific and perfect management system of pesticide waste

The construction of pesticide waste management system mainly includes three aspects: management mode, hardware and software configuration and system construction. First, management mode. According to the characteristics of regional agricultural production industry, it is necessary to set up corresponding management groups and clarify the rights and responsibilities. Based on this, guide and supervise the treatment of pesticide waste in the jurisdiction [4]. Improve the mechanism of concentration, transportation and treatment of pesticide waste to ensure that each link meets the basic requirements of agricultural environmental protection (Figure 1). Second, hardware and software configuration. The corresponding hardware and software facilities are provided for the treatment of regional pesticide waste, such as setting up special pesticide waste disposal boxes at the places with less ecological impact in the farmland area, so as to facilitate the centralized disposal of agricultural producers. Another example is to provide special tools for regional inspection and maintenance personnel to facilitate the detection and collection of pesticide waste. Third, system construction. Based on the basic principles of pesticide waste management and agricultural environmental

protection, a complete set of laws and regulations should be established to clarify the violations of the system, and appropriate punishment measures should be formulated. At the same time, according to the development of related work, we should formulate incentive policies, and reward the behaviors that contribute to pesticide waste management and agricultural environmental protection [5].

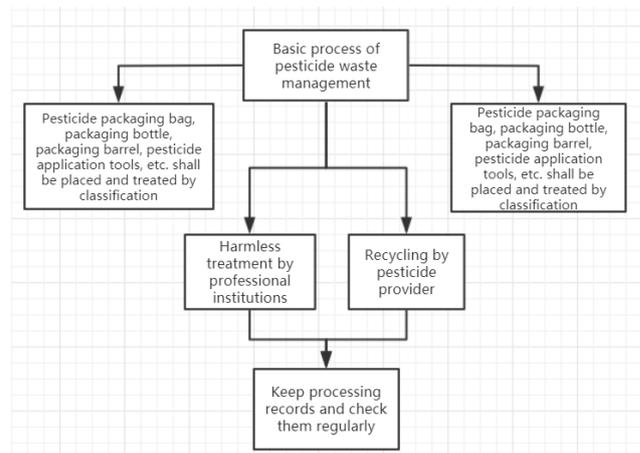


Figure 1 Basic process and requirements of pesticide waste management

4.3. Increase investment in related technologies

The technical input of pesticide waste management and agricultural environmental protection mainly includes the following aspects: first, the construction of information management system. Through the construction of information system in the pesticide waste management and agricultural environmental protection team, strengthening internal communication and improving the efficiency of information interaction, the management efficiency can be improved. At the same time, through the construction of information communication channels between managers and agricultural producers, on the one hand, it is conducive to the popularization of relevant management publicity information and policies, on the other hand, it provides a fast channel for the upload and feedback of relevant suggestions, reports and supervision information. Second, upgrade the configuration of pesticide waste treatment. For the treatment of pesticide waste, it is necessary to increase the investment in related technology, further realize the harmless treatment of waste, and even realize the reuse of waste. Third, actively encourage pesticide technology innovation. First of all, we should strengthen the research on the technology of reducing and increasing efficiency of chemical fertilizers and pesticides, reduce the amount of pesticides, and reduce environmental pollution. Secondly, through the application of advanced biotechnology, seek harmless alternatives for pesticides, reduce the dependence of agricultural production on pesticides [6]. Finally, through the innovation of agricultural production technology, improve the

resistance of crop diseases and insect pests, optimize the field management, and then reduce the use of pesticides, reduce the pressure of pesticide waste management.

5. CONCLUSION

To sum up, with the higher and higher level of modern agricultural production management and the more scientific concept of social development, the problems of pesticide waste management are gradually exposed. Therefore, the relevant areas need to deeply understand the impact of pesticide waste management on local agricultural environmental protection work, and actively improve the awareness of scientific drug use and environmental protection of agricultural producers through publicity and promotion. On this basis, through the construction of scientific pesticide waste management mode, improve the management system, combined with the investment of related technology, further improve the level of pesticide waste management, promote the quality of contemporary agricultural environmental protection work, and make an important contribution to the improvement of agricultural production quality and the sustainable development of society.

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