

## Macro-orientation, Practical Dilemma and Path Choice -- Thoughts on China's Policy of Control of Livestock and Poultry Feces

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**Abstract:** The combination of planting and breeding industry is not close in our country, and the pattern of planting and raising separation leads to the low utilization ratio of livestock and poultry manure and poor comprehensive benefit. A large number of chemical fertilizers and pesticides are used in planting industry, resulting in soil consolidation and non-point source pollution, which affects the sustainable green cycle development of planting industry. Large-scale farm manure accumulation, can not discharge, resulting in environmental pollution and waste of resources.

### 1. Introduction

Through accumulation and fermentation, mechanical processing and biochemical treatment, livestock and poultry manure can be prepared organic fertilizer, combined with soil testing formula fertilization technology, applied to planting industry, taking the path of combination of planting and raising, farming and animal husbandry circulation, which can not only promote the healthy and rapid development of livestock breeding industry, but also reduce agricultural cost input and improve the economic benefits of traditional planting industry. In order to obtain first-hand information in the production practice line, we began to investigate and visit livestock and poultry farms in 6 counties from late September, and preliminarily understood and understood the utilization of livestock and poultry manure resources in Dezhou City. The situation is introduced as follows: At present, the problems in the treatment of livestock and poultry manure in Dezhou City are mainly as follows:

### 2. Attention is Low

Livestock and poultry manure is dirty and smelly, and the utilization rate is low. Before the environmental protection inspector, that is, before 2015, many farms directly discharged manure, resulting in the river ditch around the farm, the site stink fumigation, polluted the living environment. With the environmental improvement work in recent years, the equipment of manure treatment facilities has been listed as an important part of the construction investment of livestock and poultry farms. The targets of livestock and poultry manure treatment in Dezhou in 2019 are as follows: the allocation rate of manure facilities in large farms reaches 100%, and that in standardized farms is over 95%. But most livestock and poultry farm households are under the pressure of environmental inspectors to build manure facilities, initiative, enthusiasm is not high, not enough attention to the utilization of waste resources.

Cattle, sheep and other grass-eating livestock excrement smell is not big, if can do a good job of cleaning and ventilation, the farm will not cause discomfort, easy to promote the management of aquaculture. But pigs, chickens and other food livestock manure contains ammonia, hydrogen sulfide and other irritating gases, if ventilation is not smooth, manure accumulation, plus hot temperature, will cause pollution of the environment, stink disturbing people and other phenomena.

The investigation and visit found that a broiler farm was close to the village, the whole village

when the summer was gloomy and sultry, the smell of chicken manure filled, triggered villagers petition complaints, under the coordination of the county government and animal husbandry, land departments, broiler farms moved to far away from residential areas, not only conducive to the improvement of the living environment, but also to ensure livestock production.

But in the breeding area, the disposal of manure is still a difficult problem, so we need to find a way of sustainable development and resource utilization.



Figure 1 Governance

### 3. Technical level is low

There are large scale broiler farms and laying hens farms in Dezhou City, with more than 300,000 broiler farms and more than 200,000 laying hens. But for more small and medium-sized farms, there are difficult to collect livestock manure, difficult to deal with the situation. At present, the manure treatment of small and medium-sized livestock and poultry farms can basically achieve the separation of the breeding area, the living area and the manure treatment area, with simple manure treatment facilities and equipment. But has not completely established the standardization, the technical, the mechanization fecal pollution facility equipment, many small and medium-sized farms are simple, the fecal pollution facility equipment is relatively backward. During the summer and autumn seasons, the dung-laden vehicles, piles of dung, flying flies and smelly odors in the manure-treatment areas are the "standard" for the manure-treatment areas.

In a family farm-type laying hens farm in the county, the chicken farm has transferred more than 400 mu of land and purchased machinery and equipment such as dung-sowing vehicles. The farm manager said that after applying chicken manure, the land has strong moisturizing ability and high soil fertility. A dairy farm director introduced, dairy farm and broker signed a contract to buy cow dung, cow dung was transported by the broker 70 miles away from the vegetable shed, each car out of the market price of 300 yuan, shipped to the destination can sell 900 yuan. The sale of cow dung to vegetable shed households has promoted the utilization of manure resources, improved the benefit of planting industry, and achieved more with one stone.

### 4. Industry operation is difficult

The construction standard of large pig, laying hens and broiler farms is relatively high, and the production line of manure treatment has been specially established to convert livestock and poultry manure production into organic fertilizer, the price of which is about 600 yuan per ton, the price of compound fertilizer in chemical fertilizer is more than 2000 yuan per ton, and the price of livestock and poultry manure is less than one third of the price of compound fertilizer. Farm livestock manure self-produced and sold, the majority of farmers to livestock manure organic fertilizer awareness is not high, used to use chemical fertilizer.

In response to the above, the following recommendations are made:

#### 4.1. Increased Policy Subsidies and Promotion of Waste Management

In recent years, the state has increased investment in environmental protection infrastructure and

operation, and the project of resource utilization of livestock and poultry manure has been implemented successively in Yucheng, Linyi and Qihe counties of Dezhou City, and the counties have made periodic progress. Subsidy funds are mainly used for the construction of centralized treatment centers for livestock and poultry manure and the renovation and upgrading of manure treatment facilities for breeding enterprises. We should strengthen the research work of the county where the project is carried out, sum up the successful experience, draw lessons from the failure, and find a way of sustainable utilization of manure resources.

The state began to attach importance to the treatment of livestock and poultry manure, and increased the policy subsidies for the equipment of manure treatment facilities. The State subsidizes agricultural machinery for handling equipment for livestock and poultry wastes by 30 per cent of the purchase price. It mainly subsidizes biogas slurry extraction equipment, harmless equipment for sick and dead livestock and poultry and dry anaerobic fermentation equipment for organic wastes. According to technical specifications such as equipment volume, each equipment unit subsidizes about 1000 to 30000 yuan. Farmers should actively do a good job of manure treatment, reasonable compliance with the declaration of agricultural machinery subsidies, the purchase of manure treatment facilities and equipment.



Figure 2 Governance

#### **4.2. Basic-Level Technology Promotion and Promotion of Agro-Pastoral Development**

Agricultural rural areas, ecological environment, land resources and other departments jointly organize scientific and technological personnel around the utilization of livestock and poultry manure resources, strengthen scientific and technological research and advanced technology application. To ensure the production of livestock and poultry manure reduction and promote the harmless disposal of livestock and poultry wastes. We encourage large-scale farms to adopt solid-liquid separation mode to treat manure, compost solid manure or set up centralized treatment center to produce commercial organic fertilizer, and adopt three-stage sedimentation method to achieve green pollution-free discharge of sewage. Encourage "organic fertilizer + fertilizer" soil formula fertilization technology, improve soil fertility, and promote livestock and poultry manure nearby field utilization. Demonstration and promotion of "breeding farm + planting farm" combination model to improve the comprehensive utilization rate of manure.

#### **4.3. Improved Support Policies**

Such as through the introduction and improvement of the corresponding support policies. Although our country has issued corresponding opinions on this kind of work, but in the continuous development of livestock and poultry industry, the traditional policy approach has been unable to keep up with pace of development of the times[2] . Therefore, we should combine the actual situation to adjust and perfect the policy. For example, combined with the actual development of livestock and poultry industry, the formulation of livestock and poultry breeding pollution policy and the utilization of waste resources policy. (c) Seek to implement subsidy policies in different

parties; for example, integrate ecologicalization into agricultural machinery subsidies. Promote small and medium-sized farmers to enjoy the benefits and security brought by the policy. As far as possible water-saving drinking water, automatic feeding system and microbial fermentation equipment into the agricultural machinery subsidies. For the country-related project funds to strive for the integration of existing project funds to ensure the scientific and rational use of funds. It is necessary to increase investment in modern ecological breeding of livestock and poultry to realize the sustainable development of livestock and poultry breeding.

#### **4.4. Implementation of Responsible Subjects**

The implementation of the responsible subject needs more attention and attention from the relevant departments and staff. According to the principles of who produces pollution, who manages pollution and who pollutes, we sign the commitment of resource utilization. At the same time, all project households into the direct reporting platform supervision. Construct the corresponding responsibility subject system, urge the relevant staff and relevant work departments, can have a correct understanding of their own work. Clear oneself in modern ecological breeding promotion, promote livestock and poultry manure resource utilization should shoulder responsibility [3]. In this way, it is possible to ensure that specialized staff are responsible for all aspects of the work, avoiding situations where work is not in place or where there is no professional responsibility.



Figure 3 Governance

#### **4.5. Strengthening Infrastructure**

In order to realize the goal of promoting the utilization of livestock and poultry manure as soon as possible, we should strengthen the construction of infrastructure and increase the investment. Comprehensive measures should be taken to ensure that at the end of each year, the utilization ratio of equipment and facilities can reach more than 75%. In the daily use of equipment and facilities, timely maintenance and maintenance work. In this way, the problems existing in the equipment and facilities can be found in time, and the solutions are given to ensure the safe and stable operation of the equipment and facilities in the process of use. In livestock and poultry farms, we should be equipped with quantitative treatment facilities for manure pollution rights, so as to better realize the treatment of manure pollution.

The cowshed adopts the mechanical dung cleaning process, and the cow dung urine is scraped into the dung channel through the scraping board, and then into the collection pool. All the cow dung and urine in Haifeng dairy farm enter the biogas plant, after the cow dung and urine solid liquid separation in Shenfeng dairy farm, the liquid part enters the biogas plant, the biogas fermentation product solid liquid separation, the biogas residue after drying as the cow bedding material, can supply 44000 tons of high quality bedding material every year, compared with the sawdust cushion material, can save more than 8 million yuan per year, the excess biogas residue is sold to the organic fertilizer plant as the raw material for the production of organic fertilizer. After the biogas liquid was stored in the oxidation pond and completely decomposed to kill the pathogenic microorganism and parasite eggs, it was used in the surrounding supporting 28000 mu silage farmland, and the local saline-alkali land could also be improved. The biogas project is run

by a third party cooperative unit, adjacent to the dairy farm. Daily production of 20,000 cubic meters of biogas, power generation 40,000 degrees per day, per degree of electricity sales revenue of 0.63 yuan, generating units run 330 days a year, annual sales revenue of 8.9 million yuan.

## **5. Summary**

To sum up, the promotion of modern ecological breeding and the utilization of livestock and poultry manure resources play an important role in the better development of livestock and poultry breeding industry. Therefore, the staff should pay more attention to this work, combine with the actual situation, through improving the way of support policy, increase the intensity of investment and other different ways, so as to promote the ecological farming methods can be fully popularized, thus creating more economic and ecological benefits.

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