

Investigation and Research on Straw Leaving Field in Heilongjiang Province

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Abstract: In September 2018, Heilongjiang province issued the interim provisions on rewards and punishment for prohibiting straw burning in the open air, strictly controlling the phenomenon of straw burning in the open air. The release of this regulation effectively inhibited the open burning of straw and brought good air quality to our province. At the end of February 2019, in order to do a good job in preparing for spring ploughing production, our province has made deployment, requiring the majority of farmers in all regions in the specified period of time as soon as possible to make straw off the field, the disposal of arable land residue. What is the effect? What else can farmers expect? Recent NBS survey office in Heilongjiang province in 13 cities and counties in 546 related personnel has carried on the questionnaire survey for the fourth time, and Harbin Hulan district to carry out the research for the third time, the results showed that part of the plot of straw from the field status has yet to reach for spring production requirements, the ground and residue exists, if processing is not good will not only affect agricultural production this year, also affects the rural areas in the future and masses straw comprehensive confidence and determination.

Investigation

Scope of Investigation. The survey was conducted in 8 cities and 5 counties including Qiqihar, Mudanjiang, Jiamusi, Jixi, Shuangyashan, Hegang, Suihua, Nongken, Acheng, Mishan, Baiquan, Helun and Zhaodong. 546 respondents were randomly selected, among whom 416 were farmers, 65 were village cadres and 65 were related department personnel. There were 431 men and 115 women, who conducted questionnaires, field visits, held symposiums, went deep into the field to check the situation of straw leaving the field, and entered the straw comprehensive utilization press factory to visit and discuss.

Progress of Straws Leaving the Field. The survey showed that among the 416 farmers interviewed, 252 of them had all straws from the field, and the straws from the field rate was 60.58%. As for the reasons why part of the straw packaging did not leave the field, 21.95% of the farmers chose to collect it in a timely manner, 25% of the farmers chose to deal with the high cost, 19.51% of the farmers chose not to acquire relevant enterprises, 3.05% of the farmers chose not to know how to use it, 7.93% of the farmers chose to keep it as firewood, and 22.56% of the farmers chose other reasons.

The Main Treatment of Straw from the Field. First, it was carried out by manual and mechanical baling and stacked in a designated place. Part of it was processed through the opening of the first field finishing window. The second is to transport to the abandoned land fertilizer pit, as manure fermentation treatment; Third, the package is transported to the crushing station, after the crushing processing as fuel use.

Changes in Farmers' Attitudes. Among the 416 farmers surveyed, 36.1% were in favor of banning straw burning, 21.4% were in favor, and 15.4% were waiting and waiting, indicating that they were not satisfied, and 27.0% were still burning after the policy was relaxed. The number of "yes and respond" choices dropped 34.6 percent from the December 2018 survey.

Part of the Area Straw from the Field, Clearing the Ground Residue Work Has not been Fully Completed

Survey results show that 60.58% of farmers have completed the straw from the field work, the remaining straw from the field work is intense. In the areas where the work has been completed, the ground residues (mainly straw roots) have been treated intensively during the first window opening period, but some straw roots have not been cleaned completely. Second, in the process of straw packaging treatment from the field, the degree of straw harvesting is different, sometimes the middle of the field dislocations appear isolation zone, to the centralized burning difficult.

The following factors affect the unfinished field work:

Affected by the Terrain Conditions. In some areas of Heilongjiang province, farmland is located in mountainous and hilly areas, which does not have the conditions for mechanical packaging, and does not have the conditions for mechanical breaking and returning farmland. In some areas, the mountain slope is relatively large, and large and medium-sized agricultural machinery cannot be used in farming. Therefore, only by manual raking and burning can the land be turned over in autumn and spring.

Subject to Financial Constraints. The flat land in some machinery processing conditions, due to the straw from the field cost is high, farmers are reluctant to pay since returning from the field processing, often need a centralized and unified country government department, and returning straw crushing, about 40 to 50 yuan per mu to processing costs, this adds to the rural finance and peasant's burden, cause parts work advance slowly.

Affected by the Shortage of Large Machinery. At present, the large agricultural machinery in most rural areas of our province is inadequate, unable to complete the rapid and efficient collection and sorting work. In principle, the proportion of subsidies for purchase of agricultural machinery for equipment returning to the farmland should not exceed 30%, but actually it is only 10-20%. Small forklift, forklift, transmission equipment and other straw from the field loading machinery equipment is not covered by the subsidy, the purchase cost is high, affecting the farmers themselves from the field work schedule.

Affected by Conditions. Under the premise of no contact with the acquisition unit, most farmers chose to return straw to the field for autumn land preparation. If this land preparation method requires 1200 yuan/mu for farm hands, that is, 600 yuan is contributed by the peasant household and 600 yuan is subsidized by the government. Because there is no straw processing plant in Fangtai town of Hulan district visited, the straw can only be stacked on the ground and transported to the fertilizer yard for natural fermentation, which has no economic benefits.

The Comprehensive Development of Straw from the Field Work, to Promote the Comprehensive Utilization of Straw Problems

Slow Transformation of Economic Achievements. At present, the output of straw in our province far exceeds the amount that fuel processing enterprises can consume. Although a part of straw is exported to the outside, compared with the output of straw, the supply exceeds the demand. Therefore, farmers often have concerns about the mood, worried about spending money to package good straw no one to buy, to achieve economic benefits, the last white busy, so the enthusiasm is not high.

The Market Demand for Straw Bale and Compacting Products is Limited. Due to the increase in the construction investment cost of straw fuel power plant and the lack of popularity of biomass boilers, the market demand for the finished products produced by compost is insufficient. Some of the surveyed compost plants are basically half-load production, with some capacity less than 30%, and the economic benefits are insufficient, which cannot mobilize the enthusiasm of production.

Poor Effect and Difficulty in Secondary Treatment. Due to the short time of the first field finishing window, the rain and snow weather, and the residual soil left in the straw pile, the cleaning is difficult. Therefore, the effect of centralized incineration is not ideal. According to farmer report, the difficulty is bigger when the cropland after straw leaves the field clears residue. The residue left

in the field, especially the root of the plant is not connected into pieces, not only increases the difficulty of burning, but also increases the cost (according to the villagers of Jibao village in Hulan district, the average cost of burning straw root in a hectare is about 100 yuan). On March 12, the whole province fell into heavy snow, and it was difficult to ignite and burn the straw when it was affected by moisture, which had a great impact on the second window period of centralized treatment opened on March 20.

There are Worries and the Mood of Production Cuts is Spreading. The investigation shows that since the autumn of 2018, Hegang city of our province has been in a state of drought. Straw returning to the field has been turned into the ground, which leads to the soil ventilation, the decrease of humidity and the even insufficient water content. If there is less rain in spring, farmers worry that the soil will not catch the seedlings after sowing, which will affect this year's agricultural harvest. Under the established conditions that a large number of straws are returned to the field year after year, the formation of spongy fields will affect sowing, seedling emergence rate and lodging resistance, resulting in crop loss.

Without Understanding, Farmers are not Optimistic about the Situation this Year. Straw processing legacy is more, farmers do not think of straw processing is not timely, accurate will affect next year's harvest, grain yields a negative attitude towards 2019, everyone is holding the conservative wait-and-see attitude, party a town farmers, and by straw processing, residue did not reach the designated position, farmers also worry that the impact for plowing, therefore, since the new land price has not come out, but in the past, in January, before and after the land has come out. Although the land price of Jibao village has come out, it is about 15% lower than that of last year. In 2018, the land price of Jibao village is 8,500 yuan/hectare, but in 2019, the land price is 7,000 yuan/hectare.

Under Great Pressure, Rural Cadres are Afraid of Difficulties. Due to the large funding gap, the battle of straw is a political task, some rural cadres even pad their own money or for the villagers to carry out the work of ious, the investigation also learned that there are very few villagers in Fangtai town secretly set fire to the land, deliberately intensified the contradiction between cadres and groups. Zhang Zhitao, deputy mayor of Fangtai town, described the township cadres in the straw burning ban work "on the top pressure", a lot of pressure.

Increase the Chance of Diseases and Insect Pests, Breeding Resistance. Traditional direct operation in the field burned straw, the remaining insect eggs and weed seeds also carried out synchronous incineration treatment, and added natural fertilizer for the land, more favorable for planting next year. However, after this year's straw treatment was unified, the insect eggs and grass seeds in the field were not disposed of at one time. Therefore, the growth rate of diseases, insect pests and weeds was increased, which laid a hidden danger for the smooth development of planting. Villagers Chen, last year was farmland without burning straw in the first year, his family food crop pests in 2018 year of the burning of straw increased dramatically, corn by aphids violations also mutate, is more than the perennial beat before 2 times medicine control, and the rice leaf, mud hydatid also is such, every Shang to increase the cost of \$100, also waste a lot of kung fu. Affected by the downturn in the rice and soybean markets, farmers are resistant to the treatment of straw. Mr. Xiao, a farmer, still has more than 7 mu of straw left in his field.

Low Penetration Rate of Block Factories, Lack of Long-term Development Vision. During the investigation, it was found that there were no biomass power plants or straw compacted enterprises in many areas at present. Straw could only be used as fertilizer and concentrated in the window period. However, it would take some time for straw compacted factories to be popularized in each township. In visiting Hulan district of Shenyang in the streets of straw briquette factory found that rural straw briquette factory production conditions, the crushed straw produced all over the sky of dust float in the sky, production environment and environmental protection are not up to standard, is bound to cause harm to the production workers body at the same time, this creates economic value itself also run counter to the development of environmental protection concept, to reduce pollution caused by straw burning and brought new environmental pollution, at the time of construction and production of briquetting plant should consider long-term harmonious concept of green

development.

The Expectations of Cadres and the Masses

We Hope to Increase Financial and Policy Support. Although the government has invested a lot of money in promoting straw from the field, there is still a gap in funding for comprehensively promoting straw from the field. It is hoped that the government and relevant departments can increase financial support and implement the supervision measures for the use of relevant funds, so that the funds can be used in place and put into effect.

We Hope that the Layout of the Window Period will be More Scientific and Reasonable. Window open for the first time, almost 100% of farmers all applaud, but on the second window opening time, farmers still have different views, they said the government should be specific factors such as weather, geographical latitude and longitude, spring time, in conjunction with the agriculture, meteorology, environmental protection, forestry, fire department, reasonable arrangement of the window.

We Hope to Accelerate the Transformation of Economic Achievements. In the final analysis, what farmers value most is economic benefits. According to the investigation, the straw ballast fuel plant in Daluo village, Shenjia street, Hulan district has been put into production since December 2018. It can produce 20 tons of straw fuel per day at full capacity and is currently in the stage of trial operation. So far, 200 tons of straw fuel have been produced and 100 tons have been sold. The cost per ton is 500 yuan, the ex-factory price is 800 yuan, the profit per ton is 300 yuan, and the income is more than 30,000 yuan. At the same time, the factory will provide 20 permanent positions at 2,000 yuan per month, and it is expected to provide 2,000 temporary positions (on a daily or hourly basis) after full production. At the same time, the straw fuel produced by the factory is supplied to the local Shenjia sub-district office, which USES the straw fuel produced by the factory and consumes 1.5 tons of fuel per day, saving 400 yuan compared with coal. Both rural cadres and ordinary people hope that the government can speed up the operation of similar compacted fuel plants to create economic benefits for the village, provide jobs for rural residents, and save resources and operating costs for the society.

We Hope to Set up a Centralized Straws Stacking Area. Hope to establish a centralized straw processing area. Select some tree shade, low yield fields and other concentrated stacked temporarily unable to use the straw; According to the area of straw, reasonably nearby planning stacking site, easy for farmers to operate stacking; In this way, combined with rural environmental improvement, it not only strengthens the management of straw stacking to prevent rural environmental pollution, but also strengthens the fire safety management of straw stacking in a centralized way to prevent fire and ensure the personal and property safety of the masses.

Opinions and Suggestions

Put forward "five one" the party's 18th overall layout, first to the ecological civilization construction on the political level, the pointed out that the party's 19 "construction of ecological civilization is the sustainable development of the Chinese nation in one thousand, must be set up and practice the concept of green water castle peak is the jinshan yinshan, adhere to the basic state policy of resource conservation and environmental protection, with the consideration humans extend to other life ecological environment". So blue sky battle of comprehensive prohibition of straw, and promote the straw from the field work must stand in the long-term point of view, the height of the political, in the process of work may encounter some problems, some contradictions, but as long as we are focusing, firm the confidence, to fully consider the overall arrangement, will figure out a solution.

To Create a Market, Straw Bale, Pressing Block Products to Find a Way out. To accelerate the reform of straw supply side, the first is to create market players, and to provide more policy support, loan subsidies and marketing guidance for the construction of straw fuel power plants, block plants and biomass boilers, so as to encourage more straw projects and industries to be implemented. The

second is to make farmers profitable. Only the extensive and active participation of farmers can realize the ultimate goal of sustainable development of comprehensive straw management.

Increase the Straw from the Field Work of Capital and Policy Support. form a straw industry chain led by the government, with enterprises as the main body and farmers as the participants, and provide policy support and financial support for the construction of straw fuel power plants, straw compactors, professional straw packaging teams and the installation of biological boilers, so as to form a complete industrial chain and drive the local economic development through the straw industry chain.

Legal Escort. On the basis of existing administrative regulations, we will promptly formulate and promulgation relevant local laws, regulations and policies, so as to ensure that special provisions of laws can be implemented with reference, and avoid the phenomenon of inconsistent enforcement standards. Some farmers have questioned whether the current way of fine and detention is legal. It is very urgent and necessary to perfect the relevant laws and regulations to avoid the phenomenon of law enforcement. Some farmers reported that in late February, some farmers were detained by public security for burning straw residues in the field. On February 28, after the first window was opened, they could burn straw roots in the field.

Publicity and Guidance. Expanding propaganda "stalk burning" on the significance of improving the environment, because of the urban and rural residents stance is different, different people have different understanding of straw from the field level, many rural residents the potential value of straw and recognition of disadvantages of the burning straw use it as a treasure, abandon the concept of harm is not deeply rooted in the hearts of the people, promote the value of comprehensive utilization of straw, straw returned technology popularization, and make the broad masses of farmers to see economic and ecological benefits, positive change traditional farming used to adopt new technology of agricultural mechanization.

Exploration Experience. At present for the window open, everyone is a favourable view and investigation in Hulan district, most farmers Suggestions, each production cycle to open a window period will do the trick, time can be set in each year in late march and early April, in order to prevent the concentrated emissions have serious pollution, in the open time span, open, open areas should also be according to the climate, geographical position, JiWenDai around in our province, to conduct in-depth research, to determine the final window scheme, at the same time, in the open issue on time, regional layout should not be fixed, should also be flexible control, form a scientific and reasonable window layout, In order to promote the straw from the field, cleaning residue more scientific and effective work. It is suggested that an expert group composed of agriculture, environmental protection, meteorology, policy research office and other departments led by the provincial government should set up a working group to carry out field research and draw up a reasonable and effective plan for the window period with reference to mature experience at home and abroad as well as at home and abroad.

Improve Large-scale Mechanization. At present, the main problem of rural mechanical equipment is not the lack of total, but the lack of large machinery, and the realization of deep turning large machinery is a necessary condition. Taking a natural village with 100,000 mu of land as an example, the implementation of comprehensive deep ploughing requires about 4 large machinery. The 240,000 mu of farmland in two towns in Hulan district that we investigated and visited did not even have a large deep ploughing machinery. Therefore, we should increase the input in straw processing machinery, make full use of large agricultural machinery cooperatives through procurement, leasing, subsidies and other means, increase the number of straw processing machinery, and use large deep-turning machinery to deep-turning straw, so as to realize straw returning to the field and improve the efficiency of straw processing.

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