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Crop Disease and Pest Prevention and Control

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INTRODUCTION

In 2013, affected by multiple factors including abnormal climate, there broke out various kinds of crop diseases and pests in several levels. This seriously threatend the safety of agricultural production. Major wheat pests and diseases erupted early and severely; rice plant hoppers and leaf-rollers had severe and massive breakout in rice production areas in the middle and lower reaches and south of the lower reaches of the Yangtze River; the second- and third-generation army worm erupted massively, covering and affecting a large area in North China, Northeast China, Huai River and Southwest China; the eruption of potato late blight in areas of North China and Northwest China was earlier and more severe compared to the past year.

Governments and agricultural authorities at various levels further improved the three mechanisms of government leadership, local responsibility and joint prevention and control, made early arrangements, assigned responsibility as early as possible, strengthened monitoring and early warning, pushed forward specialized and unified prevention and control and green prevention and control, actively worked on universalizing knowledge and safe usage of insecticides with training program, focused on the battle to combat the spread of major insects and diseases and prevent the outbreak of epidemic diseases, making important contributions to the steady development of agricultural production and the increase in grain production for 10 consecutive years.

Crop disease and pest monitoring and early warning mechanism yielded productive results

In 2013, the MoA organized 10 meetings on migratory, epidemic and diseases and pests, released 31 issues of Information on Crop Disease and Pests, 30 issues of Weekly Report on the Occurrence, Prevention and Control of Major Pests and Diseases and 17 issues of Planting Industry Express Report. In addition, eight forecasts for whet Scab, aphids in earring period, migratory locusts, rice plant hoppers, rice blast, army worms, potato late blight and

other major pests and diseases were released on CCTV-1, and more than 300 disease and pest forecasts were released through various websites including the agro-tech propagation net (came.net.cn). More than 95% of major crop pests and diseases were correctly forecasted for the short and medium terms.

The national digital monitoring and early warning systems for major crop pests and disease were further improved, with strict information submit and review system in place, regulating monitoring information gathering and providing graphic analysis on major pests and diseases of six major crops including rice, wheat, cotton, corn, Chinese cabbage and potato as well as on locust and *loxostege sticticalis* after information was reported in the field and published online and automatically uploaded into databases. According to statistics, plant protection institutions in 31 provinces (autonomous regions, municipalities) and over 1000 regional stations for monitoring and early warning of major crop pests and diseases nationwide reported more than 17.26 million pieces of data, up by 16.0% every.

Meanwhile, a national campaign on building standard regional forecast and report station on crop pests and diseases was launched and 108 demonstration stations were selected via comparison and appraisal. A series of pilot and demonstration applications of equipment inducing smart trap lamp for pest forecast and report, automatic-counting insect-pheromone trap, color trap for small pests and all-in-one smart spore collector were initiated, laying a foundation for modernizing early-warning equipment.

Specialized and unified prevention and treatment of crop disease and pest developed rapidly

In 2013, the MoA strengthened policy support, training service and publicity in a vigorous attempt to promote specialized and unified crop pests and disease prevention and treatment under the principle of government support, market operation, farmers' voluntary participation on the basis of local conditions, while subsidizing program of "one mixed spray preventing wheat suffering damage caused by pests, hot-dry wind and lodging" and implementing transfer payment of central finance on major crop diseases and pest prevention and control.

Implemented by specialized prevention bodies, those efforts were strongly supportive of their own development and development of specialized and unified crop pests and disease prevention and treatment. Thirty training courses were held for heads of those specialized bodies, with over 3,600 backbones fostered and matchmaking symposiums conducted between top 100 bodies in service of specialized and unified prevention and treatment of crop pests and diseases and production enterprises were held as part of efforts to building an information-sharing and direct-sale platform for pesticides and relevant equipment, lowering procurement costs for those bodies while ensuring product quality. 15,000 issues of "Key to Success: Experience of Top 100 Specialized and Unified Prevention and Treatment Bodies" and 15,000 issues of "Guidebook on Training of Specialized and Unified Prevention and Treatment of Crop pests and Diseases were published and a popularization cartoon on that matter was released in a bid to promote successful experiences and good practices of specialized and unified prevention and treatment and its in-depth development.

By the end of 2013, there were more than 100,000 specialized and unified crop pests and diseases prevention and treatment bodies, of which 32,000 registered in agricultural authorities, up 1,149; a total of area of 85.333 million hectares of farmland were treated by those bodies, up 24.3%; the unified prevention and treatment rate of major crop pests and diseases of major crops including wheat, rice and corn mounted to 25.0%, up five percentage point.

Steady progress was made in promoting green prevention and control of diseases and pests and diseases

The MoA formulated and issued the 2013 National Construction Plan of Demonstration Area of Green Prevention of Crop Disease Prevention and Control, in which it made clear its overall guiding philosophy, goals and tasks as well as major promoted technology of green prevention and control. 100 national green prevention and control demonstration were established in favorable planting areas of garden crop including vegetables, fruits and tea and in production areas of major crops including rice, corn, wheat, rape and cotton while more than 1,600 county-level demonstration areas were set up collectively to show green prevention and control technologies including those of biological treatment, physical treatment, ecological control and scientific application of pesticides in a combined core areas of 1.333 33 million hectares and promote the application of those technologies in nearly 6.666 6 million hectares. Formulating Bee pollination and green plant protection and Production promotion technology demonstration Plan, the MoA established 20 demonstration bases of nectariferous or entomophilous plants including rape, apples, strawberries and tomatoes for demonstrating bee pollination and green plant protection and production promotion technology.

The MoA issued over 10,000 posters for green prevention and control technologies for crop pests and diseases, organized two high-level training sessions for green prevention and control technology for tea bush, citrus fly and apple trees and opened over 300 training sessions in field schools, of which 260 senior training lecturer, 1,200 backbone technicians and nearly 10,000 technical pioneers among farmers were trained. According to incomplete statistics, the green prevention and control technologies were applied to around 67 million hectares of farmlands for fresh agro-products including vegetables and fruits. Surveys showed the comprehensive prevention and treatment of crop pests and diseases in 90% of green prevention and control demonstration areas proved effective, reducing the use of chemical pesticides by over 20%. As a result, the agro-products' quality and safety were improved remarkably.

Training and publicity on knowledge of safe use of pesticides deepened

In 2013, 610 training sessions on safe use of pesticides were provided by the MoA in 18 provinces, training 29,000 practitioners of specialized and unified crop pests and diseases prevention and treatment pesticide dealers and professional planters. The number of the training sessions and that of the trainees increased by 1.65% and 1.8% fold respectively. The MoA organized distribution of 40,000 posters for the safe use of pesticides and 30,000 copies of guide on training on scientific and safe use of pesticides, along with 17,000 units of

protective coats and 27,000 masks. Meanwhile, the MoA launched demonstration on strengthened promotion of pilot and demonstration pesticides.

The MoA established a number of 10,000 -hectares demonstration areas for crops including rice and fruits in Jiangsu and Shaanxi Province in an effort to explore crop-specific pesticide control and damage reduction technical mode targeting the whole pest fertility circle and run tests of over 60 new kinds and types of pesticides in crop field demonstration and pilot programs and selected 30 effective and environmentally friendly pesticides out of them. In addition, the MoA strengthened pesticide-resistance monitoring and organized 100. 100 research and educational institutes and production units to systematically monitor dynamics of change of pesticide-resistance of scab, rice plant-hoppers and rice stem borers to carbendazol, imidacloprid and chlorpyrifos so as to provide theoretical basis for guiding farmers to prevent and control crop pests and diseases scientifically and the safe way of handling pests.

Regulation on interception control of plant epidemics was implemented with priorities

In 2013 , the MoA prioritized publicity , law-enforcement and inspection of plant quarantine Under the theme of “popularizing knowledge on plant epidemic prevention and control and strengthening plant epidemic quarantine inspection and regulation while preventing plant epidemic from spreading, thus ensuring agricultural production safety” the MoA launched a nationwide “Week of Plant Quarantine Publicity”, during which a total number of copies of leaflets summing up to 2.437 million were distributed, 237,000 banners posted, 5.887 publicity tours held, 8,216 exhibition boards made , providing consulting services in over 2,000 events to 625,000 people, an effective endeavor to publicize knowledge on plant quarantine and raise public awareness on plant epidemic prevention.

Under the theme of “strengthening seed quarantine, preventing plant epidemic from spreading and boosting law-enforcement”, a joint law-enforcement and inspection campaign was launched, with a total of 112,500 quarantine enforcement officers and 3, 200 vehicles deployed nationwide and inspections carried out in 13,800 seed markets, 97,900 seeds and seedling operations enterprises, 1.13 billion kilograms of seeds, 376 million seedlings and 3.862 billion kilograms of plant products. With files of administrative punishment being regulated, a number of illegal activities were investigated and punished and the influence of plant quarantine enforcement was expanded. Meanwhile, another campaign was held for jointly monitoring and preventing and controlling in coordination with the spread of major plant epidemics, due to which potato bugs, fire ants, rice weevil, cucumber green mottle mosaic and bacterial fruit blotch were well restrained, with introduction of two agricultural industrial standards including Technical Procedure of Prevention and Control of Spread of Cucumber Green Mottle Mosaic Virus.

In addition, the MoA issued a joint statement with General Administration of Quality Supervision and State Forestry Administration to include *chalara fraxinea* into Plant Quarantine Catalog of Pests Prohibited from Entry into People’s Republic of China. An illegal batch of sunflower seed totaling 1 million tons was denied entry and returned after being checked and investigated with punishment imposed.

Plant protection, pest prevention and control saw remarkable results

Thanks to those preventive measures put into place, the severity of occurrence of major crop pests and diseases was largely reduced. According to statistics, in 2013 there were a total of 485 million hectares of farmlands suffering from pests and field rats down by 4.1% annually. A combined area of 575 million hectares of farmland were under preventive measures and treatment, down by 4.9% there were 255 million hectares of farmlands suffering from major crop pests and diseases and 313 million hectares under preventive measures and treatment, saving a production loss of 69.99 million tons; 19 million hectares of farmlands suffering from cotton disease and pests and 24 million hectares under preventive measures and treatment, saving a production loss of 1.18 million tons ; 18 million hectares of farm all suffering from oil-bearing crop pests and diseases and 19 million hectares under preventive measures and treatment, saving a production loss of 2.48 million tons; and 66 million hectares of farmlands of commercial crops including fruits and vegetables suffering from pests and diseases and 89 million hectares under preventive measures and treatment, saving a production loss of 61.07 million tons.

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