

ANNEX 3: Avian Influenza in China: status, impacts, and government responses

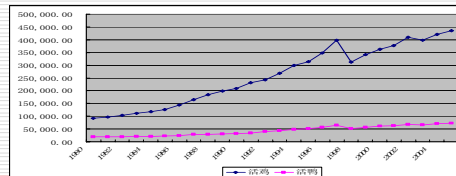
Status quo and control of China's Highly Pathogenic Avian Influenza (HPAI)

National center
of animal epidemic disease prevention and control
Wang Gongmin
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1、 Introduction of China's poultry industry

(1) rapid development of poultry industry

Since 1998, the amount of poultry on hand of China increases 3-8% per year. The year of 2005, the breeding amount reached to 15.198 billion, at the end of the year, the amount of poultry on hand was 5.333 billion, among it, the amount of chicken on hand was 4.36 billion, the amount of duck on hand was 0.73 billion, which took the 26.5% and 69.1% of the total amount of the world, separately.

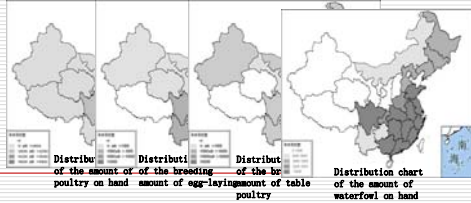


Year 1980-2005, the amount of off take of chicken and duck

1、 Introduction of China's poultry industry

(2) the character of regional distribution is quite obvious

egg-laying poultry and table poultry mainly located at northeast, north of China and south of China. Waterfowl mainly located at south of the Changjiang river. The biggest breeding amount located in Shandong province, the off take amount of poultry of 2004 was 1.47 billion, which took the 1/6 of countrywide.



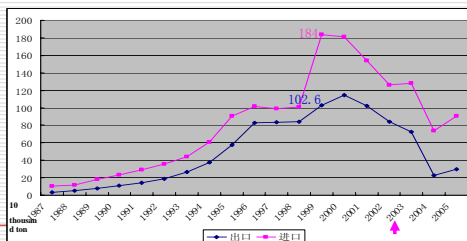
1、 Introduction of China's poultry industry

(3) breeding manner have been changed gradually

- The breeding scale is increasing gradually. From 1999 to 2004, the off take rate increased from 40.9% to 49.5% of the Large scale breeding farm.
- In 2007, state department issued the document for "promotion of the development of sustainable and healthy livestock industry"
- Ministry of Agriculture issued "regulations of supervision for animal epidemic disease prevention"
- The education was implemented for epidemic disease prevention, which enhanced the awareness for public and changed the breeding manner of the farmers.

1、 Introduction of China's poultry industry

(4) Tendency of the import and export amount of poultry meat



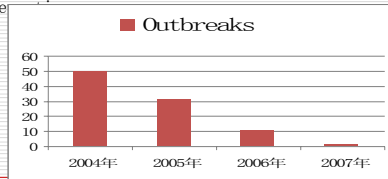
2、 Incidence of bird flu in China

- So far, no bird flu H7 was found in China
- Year 1996, for the first time, bird flu virus H5N1 was found in healthy duck. Year 2004, for the first time bird flu H5N1 caused the epidemic outbreak in Guangxi province.
- The serious negative impacts brought by the entry of bird flu

Year	Province	Key point	amount of birds		
			Amount of incidence	Amount of death	Amount of stamping out
2004	16	50	144.9 thousand	129.1 thousand	9045 thousand
2005	12	31	158.2 thousand	154.6 thousand	225712 thousand
2006	7	10	91 thousand	47 thousand	2985.2 thousand
2007	2	2	8.3 thousand	0.2 thousand	15.4 thousand
Sum	23	93	402.1	330.8	34680

2、 Incidence of bird flu in China

- So far, 23 cases were found that human were infected by HPAI in 12 provinces, 15 people were dead.
- The incidence rate of HPAI decrease obviously due to vaccine, stamping out, and other integrated pre



3、 China's strategy for prevention and control of the HPAI

- **Legislation**
State department issued the "contingency plan for animal epidemic disease" and "contingency plan for HPAI", Ministry of Agriculture issued the "technique standard for dealing with HPAI"
- **Prevention as the priority**
Since 2004, poultry were forced to take vaccine at the key area. Since Oct. 2005, all of the poultry have to take vaccine.
- **Integrated measures**
Integrated measures like vaccine and stamping out

3、 China's strategy for prevention and control of the HPAI

□ Government departments cooperation

□ Policy supporting for the development of poultry industry

compensation for stamping out of the poultry; supporting policy for relative enterprises, like reducing the tax, tax exemption, and return of the tax etc.

3、 China's strategy for prevention and control of the HPAI

- **international intercourse and cooperation**
 - 1) **Establish the reporting system of the animal epidemic disease**
 - 2004, According the regulation of OIE, China's MOA establish the reporting system for animal epidemic disease.
 - 2) **Participation of international cooperation**
 - Establish the communication mechanism for China's MOA, Ministry of Health, FAO and WHO.
 - Participate in the FAO/WHO/OIE technique conference of prevention and control of bird flu in Asia and the workshop on strategy and economic impact for prevention and control of bird flu.
 - Successfully hold the international conference of raising the fund for prevention and control of bird flu.
 - 3) **Support the cooperation on regional prevention and control of bird flu**
 - 2004, Beijing, Sino-east alliance conference on prevention and control of bird flu
 - 2005, Kunming, Ministers' conference on prevention and control of bird flu of Asia.

International intercourse and cooperation

4) bilateral cooperation

- 2005, Sino-America cooperation agreement on bird flu prevention was signed.
- Provided technique, financial and material aid to Vietnam, Korea, Indonesia and Kenya etc.
- Provided training of veterinary technique to east alliance countries.



International intercourse and cooperation

5) strengthen the intercourse and cooperation on the research of virus

Year	Provider	Receiver	Amount (株)	Virus subspecies
1994	U.K.	China		H1-H15, N1-N9
2004	China	WHO	6	H9 subspecies
	U.K., America, Japan	China	20	H9 subspecies
	China	WHO	5	HSN1 subspecies
2005	Mongolia	China	6	HSN1 subspecies (flight bird)
2006	China	WHO (America CDC flu center)	18	HSN1 subspecies
2007	Vietnam	China	6	HSN1 subspecies

3、The prevention and control strategy of animal epidemic disease in China

the prevention and control campaign for animal epidemic disease

2006, Ministry of Agriculture launched the prevention and control campaign in China for the animal epidemic disease.



the prevention and control actions for animal epidemic disease

- 1) Implement the Immunity measures
- 2) build the monitoring & early warning system
- 3) Improve the epidemic prevention system
- 4) Change the breeding manner
- 5) Strengthen the regional management
- 6) Enhance the supervision



The sign of the region of none animal epidemic disease

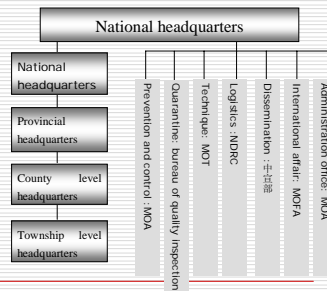


4、prevention and control measure for HPAI in China

(1) Capacity building for dealing with the contingency

- 1) Build the management system for dealing with contingency

Jun. 23, 2004, the epidemic disease break out at Guangxi Province. Jun. 30, 2004, state department established the headquarters of HPAI, and vice president as the commander in chief



(1) Capacity building for dealing with the contingency

- 2) Establish the contingency system

- Tracing the source of epidemic disease
- Identify the epidemic-stricken area
- Stamping out and innocuity disposal
- Cleanout and sterilization
- Close off
- Urgent vaccine
- Close the trade market
- Prevention and health monitoring for personnel
- unchain the blockage



The participation of military force in dealing with the epidemic disease

Regional blank off for prevention of epidemic disease

(1) Capacity building for dealing with the contingency

- 3) Rebuild production capacity

- Reduce some of the fees for farmers; postpone the time limit for the loan; interest deducted for the loan
- 10 Yuan compensation for each poultry killed.
- Establish 2 billion Yuan fund for prevention and control of HPAI by national finance, 2005



4. Prevention and control measures for HPAI in China

(2) Capacity building for keeping away risks

1) enhance the research for developing the vaccine

Vaccine	Purpose	Character
Vaccine for bird flu H5N2 subtypes	prevent bird flu caused by H5 subtypes for chicken	First vaccine for HPAI
Vaccine for bird flu H5N1 subtypes. (Re-1)	prevent bird flu caused by H5 subtypes for chicken, duck and goose	Vaccine could use for waterfowl
Vaccine for bird flu H5 subtypes	prevent bird flu caused by H5 subtypes	能鉴别免疫和野毒感染
Vaccine for bird flu and Xincheng epidemic disease (L-H5)	prevent bird flu caused by H5 subtypes and prevent Xincheng epidemic disease	是国际上第一个安全有效的负链RNA病毒活载体疫苗
Vaccine for bird flu (H5-H9) H5N1 subtypes, Re-1; H5N2 Re-2)	prevent bird flu caused by H5 and H9 subtypes	can prevent bird flu H5 and H9 subtypes at the same time
Vaccine for bird flu H5 subtypes (H5N1-Re-1; Re-4)	prevent bird flu caused by H5 subtypes	can prevent bird flu H5 subtypes

(2) Capacity building for keeping away risks

2) improve the quality of vaccine and increase the production capacity

- Produce the vaccine in qualified enterprises
- Guarantee the quality of the vaccine.
- The production capacity of vaccine is 16.18 billion per year. The production capacity of live vaccine is 25 billion, these amount of vaccine can meet China's domestic need.



(2) Capacity building for keeping away risks

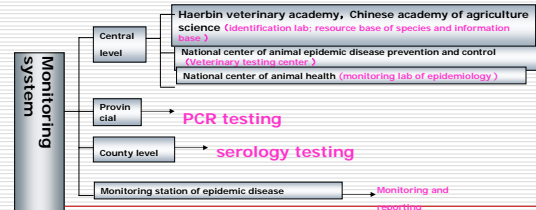
3) Standardize the vaccine procedure of bird flu.

- insure the rate of vaccine coverage; all of the poultry have to take the vaccine.
- Standardize the vaccine procedure. Large and medium scaled farm take the vaccine according to the procedure; others take the vaccine two times in spring and autumn.
- Strengthen the monitoring of the vaccine effect. Availability of the antibody below 70% need to be intensify the vaccine.
- Export enterprise could be exempted from the vaccine with the approval of provincial veterinary administration department
- Establish the accountability of epidemic prevention, in order to guarantee the 100% coverage rate of vaccine and the effect of the vaccine.

4. prevention and control measure for HPAI in China

(3) Capacity building for monitoring and early warning

1. Establish the monitoring system



全国边境动物疫病监测站、疫情测报站分布图

Location of the monitoring station of epidemic disease



(3) Capacity building for monitoring and early warning

2) standardize the monitoring progress of bird flu

- Increase the sampling amount for monitoring of the live poultry trade
- Regular monitoring of the antibody level for seed poultry farm and trade poultry farm
- Increase the sampling amount for monitoring of pigs and wild birds.
- Provide the training of the technique for lab testing, increase the capacity not only for the national testing lab but also for the provincial lab.
- Strengthen the epidemiology investigation; carry out risk analysis and establish the mechanism of classified early warning system

(3) Capacity building for monitoring and early warning

3) Monitoring of the virus' variance

- 2006, the HPAI species found in Shanxi Province are quite different from the species found in 1996
 - Vaccine testing revealed that the previous vaccine only can provide 83.3% protection rate for the variance species.
 - The new type vaccine was developed by MOA for the variance species.
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Conclusions

- China's HPAI is under control by implementing the integrated measures, like vaccine and stamping out of the poultry
 - China launched the campaign for prevention and control of HPAI. The capacity of prevention, early warning, risk awareness, the capacity of grassroots personnel and regional capacity of epidemic control has been strengthened.
 - The key point of prevention and control changed from dealing with the emergency to do the work in advance. The prevention and control system was standardized with policy and technique supporting. The effective mechanism for the prevention and control has been formed gradually.
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