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## China, Peoples Republic of

### Poultry and Products

### China's Vaccination Program for Avian Influenza

### 2005

**Approved by:**

Maurice House  
U.S. Embassy, Beijing

**Prepared by:**

Casey Bean & Zhang Jianping

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**Report Highlights:**

China's Chief Veterinary Officer from the Ministry of Agriculture recently updated information on its avian influenza (AI) prevention program. China uses three kinds of poultry vaccines for AI prevention: the AI inactivating vaccine (H5 sub-type, N-28 strain), the recombinant AI virus inactivating vaccine (H5N1 sub-type, Re-1 strain) and the recombinant fowl poxvirus live vaccine for AI (H5 sub-type). The results of these vaccines are explained in the text.

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**Table of Contents**

**Executive Summary ..... 3**  
*Results of Three Vaccines Currently Used in China ..... 3*

## Executive Summary

On March 18, 2005, Dr. Jia Youling, Chief Veterinary Officer and concurrent Director General of the Veterinary Bureau of the Chinese Ministry of Agriculture, provided FAS Beijing an update on China's efforts to vaccinate poultry against avian influenza. According to MOA, the following translated document is from a China country report from a recent FAO/OIE Asia HPAI workshop.

During 2005, the Chinese Government will invest over RMB 5 billion (approximately \$600 million) in animal disease control. China uses three kinds of poultry vaccines for AI prevention, and the Chinese Ministry of Agriculture approved these three vaccines during December 2003 to January 2005. This report is an unofficial translation of this updated AI vaccination information.

(Unofficial Translation)

### ***Explanation on Using Vaccines for Avian Influenza Prevention in China (Ministry of Agriculture, March 2005)***

*Based on the "National Emergency Plan Against High Pathogenic Avian Influenza" (HPAI), China has inoculated poultry flocks in areas susceptible to avian influenza infection. China has also inoculated poultry flocks on breeding farms, large-sized egg layer farms and in areas with a high concentration of water bodies. Poultry in certain areas designated "no enforced inoculation areas" or "no disease infected areas" are not inoculated. Other areas apply voluntary inoculation. From February 2004 to January 2005, China has inoculated a total of 2.68 billion birds--mainly chickens, ducks and geese.*

*The objective of China's poultry vaccine is to inactivate the highly pathogenic avian influenza (HPAI) virus H5N2. During 2004, this vaccine played an important role in HPAI elimination and prevention in 2004 in China. The vaccine is only manufactured at the plants designated by the Chinese Government. The National Reference Laboratory has also developed two new vaccines. One is a recombinant AI H5N1 virus inactivating vaccine, and the other is a H5N1 fowl pox live virus vaccine. They are highly efficient, safe and can be produced cost-effectively. The vaccines passed the Ministry of Agriculture's new animal drug evaluation and verification process at the end of 2004. The recombinant H5N1 virus inactivating vaccine even works better against the HPAI because its protective period for chickens is longer, and it is especially effective for waterfowl immunity. The vaccine can efficiently stop the spread of the HPAI virus. Now, it is widely used for waterfowl inoculation in water concentrated areas in South China.*

*In order to strengthen disease control and guarantee inoculation quality, the Ministry of Agriculture has carried out regular inoculation supervision and evaluation through sampling serum and pathogen tests among inoculated poultry flocks. Up to now, we have not isolated any H5N1 virus from our inoculated poultry flocks. At the same time, some provinces in South China have adopted a measure of placing inoculated poultry in highly exposed areas to watch the result of infection.*

### **Results of Three Vaccines Currently Used in China**

#### **1. AI inactivating vaccine (H5 sub-type, N-28 strain)**

- 1) Seed virus: A/Turkey/England/N-28/73, low virulent strain imported from Weybridge Laboratory Lab in Britain.

- 2) *Result: The antibody level reached the highest of 8 log<sub>2</sub> in the 5th week after effective immunity and was maintained for 4 weeks. The antibody protective level can be sustained into the 23<sup>rd</sup> week after effective immunity.*
  - 3) *Feature: The Ministry of Agriculture approved this vaccine a new bio-product for animal inoculation in December 2003. This vaccine was widely used in China during the outbreaks of HPAI at the beginning of 2004.*
2. *Recombinant AI virus inactivating vaccine (H5N1 sub-type, Re-1 strain)*
- 1) *Seed virus: Artificially modified conventional seed virus A/Goose/Guandong/1996 (H5N1), which is representative for the antigen in China, to make H5N1 virus inactive through recombination with human flu virus.*
  - 2) *Result: The antibody reached highest level of 9 log<sub>2</sub> in the third week after the effective immunity, and it was maintained for 4 weeks. The antibody protective level can be sustained into the 25<sup>th</sup> week after effective immunity.*
  - 3) *Feature: MOA approved this vaccine a new bio-product for animal inoculation in January 2005. It works efficiently for avian influenza, it helps poultry organs generate high levels of antibodies and the protective period lasts longer. The laboratory experiments proved that waterfowl inoculated with this vaccine are free of AI infection or infectivity. Many countries in the world now use this method to try to develop vaccines, but only China has succeeded and put the vaccine into commercial production.*
3. *Recombinant fowl pox virus live vaccine for AI (H5 sub-type)*
- 1) *Seed virus: Use A/Goose/Guangdong/1996 (H5N1) as part of gene donor to make a recombinant fowl poxvirus for a live vaccine.*
  - 2) *Result: The antibody reached the highest level of 7 log<sub>2</sub> in the second week after effective immunity. The antibody protective level can be sustained into the 26<sup>th</sup> week after effective immunity.*
  - 3) *Feature: The Ministry of Agriculture approved this vaccine as a new bio-product for animal inoculation in January 2005. It helps create antibodies against the antigen of specific proteins. Therefore, it is good to differentiate immunity and field infection. Mexico also has this kind of vaccine and widely uses it.*

(End of translation and report)