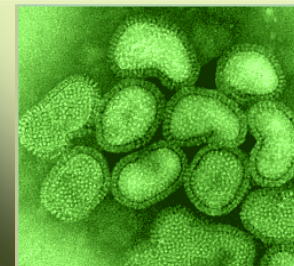
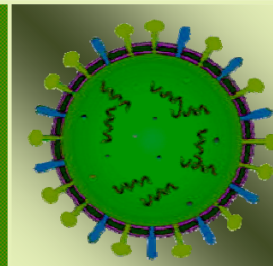


LegCo Panel on Food Safety and Environmental Hygiene

Field Trial Programme using the Harbin Re-5 H5N1 Avian Influenza Vaccine in Local Chicken Farms

Presented by Assistant Director of
Agriculture, Fisheries and Conservation Department

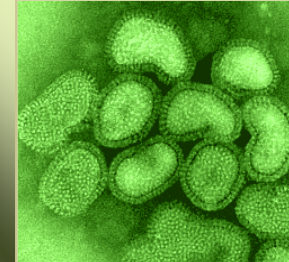
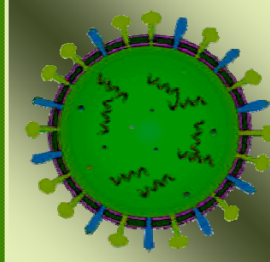
Dr. Thomas SIT



Agriculture, Fisheries and Conservation Department

January 2011

Objective



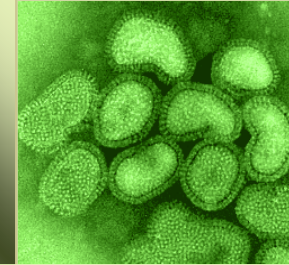
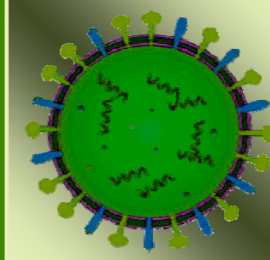
To evaluate the efficacy of the Harbin H5N1 Avian Influenza (AI) vaccine against Highly Pathogenic Avian Influenza (HPAI) viruses in local chicken farms.



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II. AI Vaccine Study

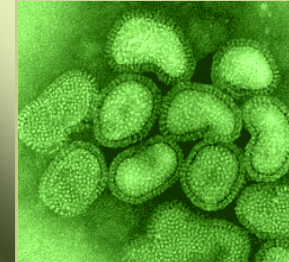
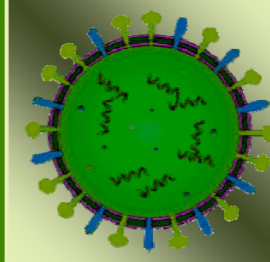


II. AI Vaccine Study



Agriculture, Fisheries and Conservation Department

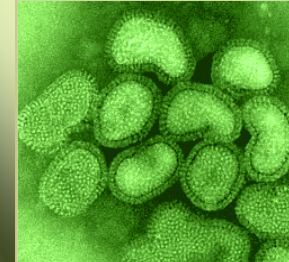
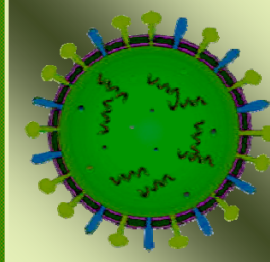
II. AI Vaccine Study Background (1)



- AI vaccination programme for chickens in local farms was mandatory introduced in 2003;
- Currently the AI vaccine used is *Intervet Nobilis H5N2* vaccine;
- No AI outbreak occurred on local chicken farms until in December 2008



II. AI Vaccine Study Background (2)

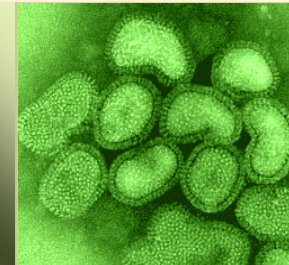
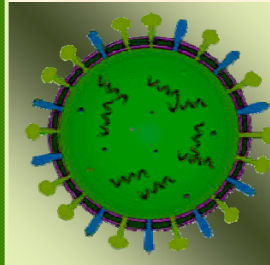


- In December 2008, AI infection was detected in both vaccinated and unvaccinated chickens in a chicken farm located at Yuen Long.



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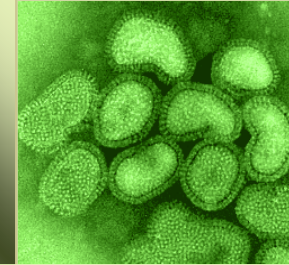
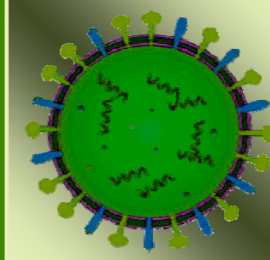
II. AI Vaccine Study Background (3)



- **Genetic analyses of the virus showed that some genetic difference from the HPAI viruses previously found in HK.**
- **Two investigation groups were then set up with the following functions:**
 - a) **to find out the possible causes/sources of infection and to examine the adequacy of biosecurity measures of the infected farm;**
 - b) **to conduct a vaccine study to examine the efficacy of the existing vaccine and to explore alternative vaccines.**



II. AI Vaccine Study Background (4)



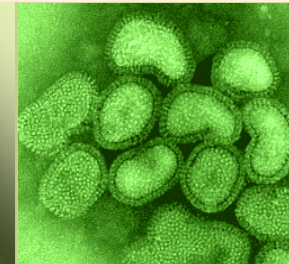
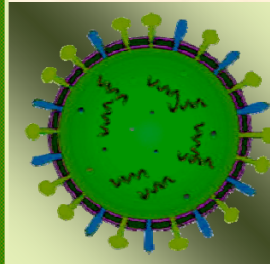
Investigation Group on Vaccine Study (IGVS) comprise of:

- a) **Convenor - Director of Agriculture, Fisheries and Conservation;**
- b) **Experts from the University of Hong Kong;**
- c) **Experts from the Ministry of Agriculture of the Mainland;**
- d) **Representatives of AFCD and Department of Health.**



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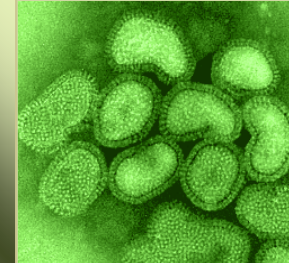
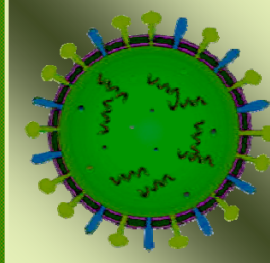
II. AI Vaccine Study Background (5)



- With the endorsement of the IGVS, AFCD engaged three research institutions to conduct vaccine challenge studies to compare the efficacy of three AI vaccines against representative clades of H5N1 viruses detected in HK, including the virus found in local chicken farm in December 2008.
- The three vaccines studied were:
 - a) the *Intervet Nobilis H5N2* vaccine currently use on all chicken farms since 2003;
 - b) the *Harbin Re-5 H5N1* vaccine (Re-5 vaccine) currently use on chickens in the Mainland for export to HK
 - c) a H5N3 vaccine selected for use in the European Union since 2006



II. AI Vaccine Study

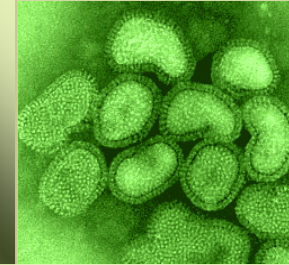
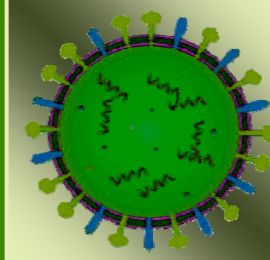


Harbin Re-5 H5N1 vaccine (Re-5 vaccine)



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II. AI Vaccine Study Background (6)

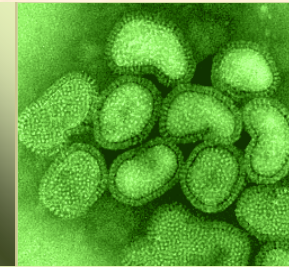
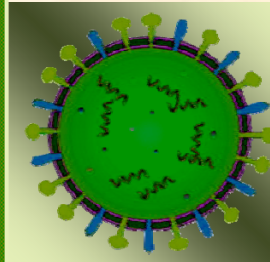


Major findings:

- a) Existing Intervet vaccine is still largely effective against H5N1 HPAI virus.
- b) Harbin Re-5 H5N1 vaccine provided similar or even better protection as compared with the Intervet vaccine.



II. AI Vaccine Study Background (7)

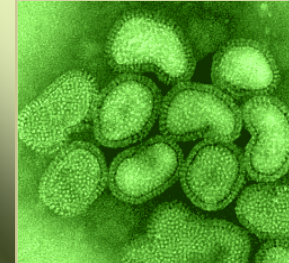
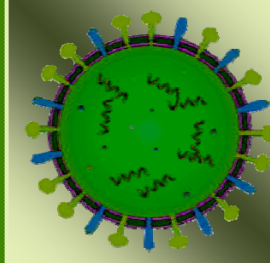


Suggestions by IGVS:

- a) Continue to use the current Intervet vaccine for vaccinating chickens in local farms;
- b) Conduct field trials in local farms to comprehensively evaluate Re-5 vaccine's efficacy and to observe any adverse effect on chickens under local conditions.



III. Chicken Farming in Hong Kong

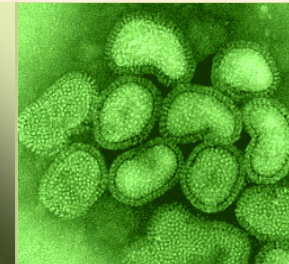
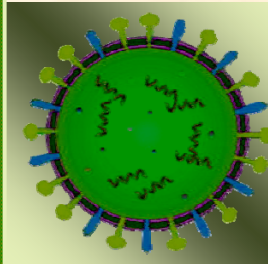


III. Chicken Farming in Hong Kong



Agriculture, Fisheries and Conservation Department

III. Chicken Farming in Hong Kong (1)

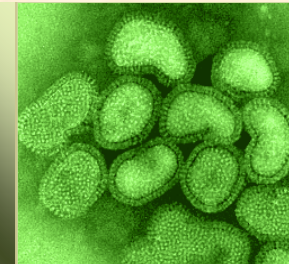
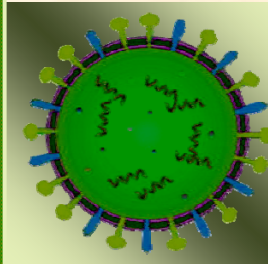


- **Currently there are 30 chicken farms in HK;**
- **Total licensed rearing capacity of 1.3 million chickens;**



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III. Chicken Farming in Hong Kong (2)

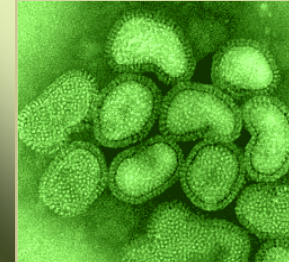
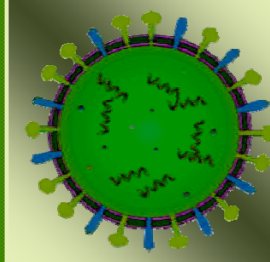


- Chickens usually raised in successive batches throughout the year;
- Size of each batch ranges from 2000 to 5000 chickens;
- 60 sentinel chickens (chickens without AI vaccination) in each batch must be kept to enable early detection of any HPAI virus introduced into the farm.



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IV. Design of Field Trial

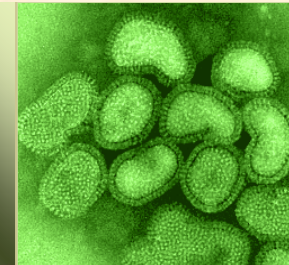
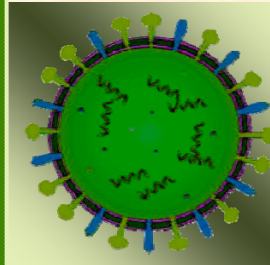


IV. Design of Field Trial



Agriculture, Fisheries and Conservation Department

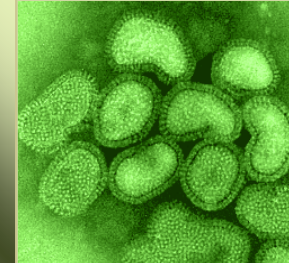
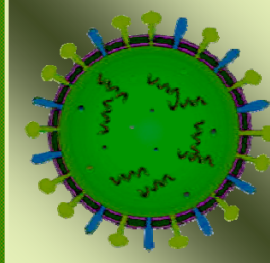
IV. Design of Field Trial (1)



- Local chicken farmers have been invited in the field trial on a voluntary basis;
- Participating farmer must have a good husbandry management and agree to meet the requirements of the field trial (e.g. vaccination, report of mortalities etc.);
- The field trial will be conducted for a maximum of 12 months
- About 8-10 batches of chickens may be raised during that period;
- 4-5 batches of chicken will be vaccinated with the Intervet vaccine;



IV. Design of Field Trial (2)

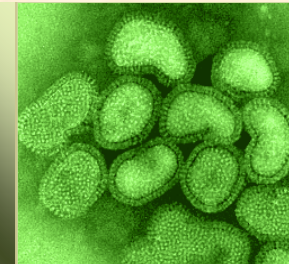
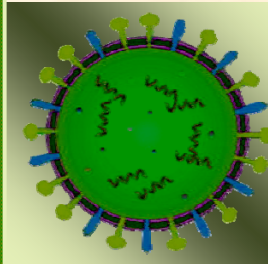


- **Equivalent number of batches of chicken will be vaccinated with the Re-5 vaccine;**
- **AFCD staff will be present during vaccination with the Re-5 vaccine to ensure proper vaccination;**



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IV. Design of Field Trial (3)

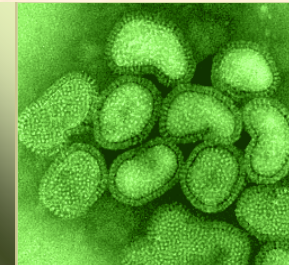
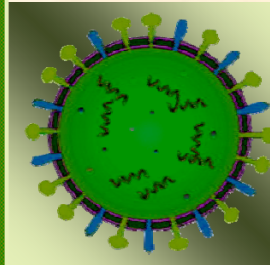


- **Blood samples and cloacal swabs will be collected from both batches of chicken in the following time frames:**
 - a) **on the day before the first vaccination**
 - b) **28 days after the first vaccination**
 - c) **28 days after the second vaccination**
 - d) **within 10 days before sale**



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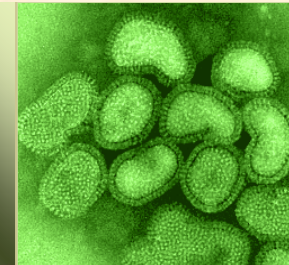
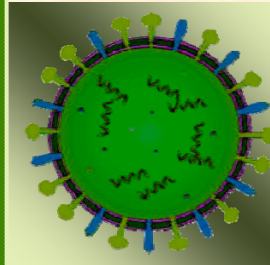
IV. Design of Field Trial (4)



- **H5 antibody titre level and presence of AI virus will be tested;**
- **AFCD Veterinary Officer will conduct weekly clinical monitoring of the chickens;**
- **All dead and sick chickens in these batches will be sent to Veterinary Laboratory of AFCD for disease investigation;**
- **Environmental sample will also be collected from each farm per month for AI virus testing to monitor the presence of AI virus in the farm environment;**



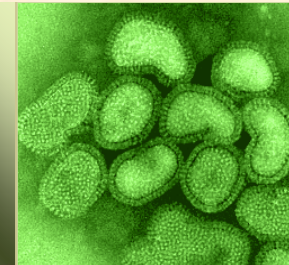
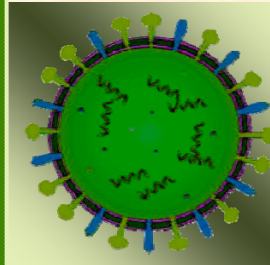
IV. Design of Field Trial (5)



- **AFCD will suspend the field trial in the farm if any irregularities are found (e.g. abnormally high mortality of chickens or serious disease outbreak);**
- **Investigation will be conducted immediately to identify the possible cause of the situation;**
- **If HPAI infection confirmed, actions will be taken according to the established AI contingency plan and an epidemiological investigation will be conducted to trace the source of infection;**



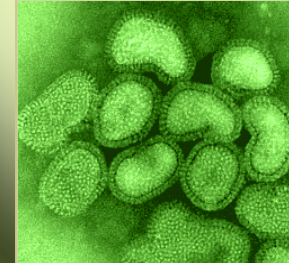
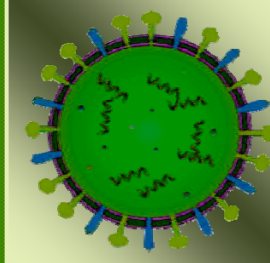
IV. Design of Field Trial (6)



- If not related to HPAI infection , the field trial will be resumed and the chickens will be vaccinated by the same vaccine as used before the suspension;
- The Government will continue to maintain a high degree of vigilance against AI; and
- Vaccination measures will be maintained to protect chickens from the HPAI virus.



IV. Design of Field Trial (7)



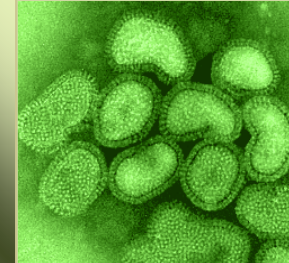
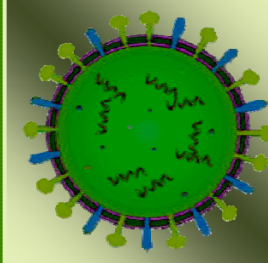
The following biosecurity measures on chicken farms will continue to be implemented and enforced:

- a) **Installation and maintenance of metal mesh net to prevent entry of wild birds into chicken farms;**



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IV. Design of Field Trial (8)



b) Enhanced hygiene facilities and visitor control measures;

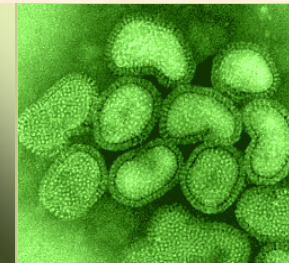
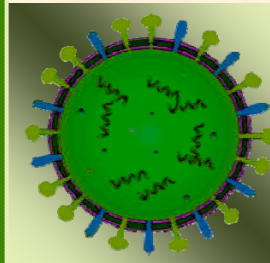


c) To conduct regular farm inspection.



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V. Progress

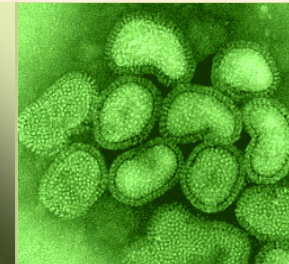
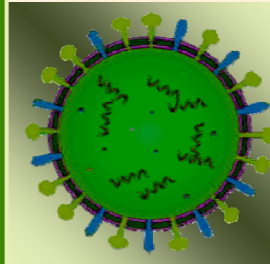


V. Progress



Agriculture, Fisheries and Conservation Department

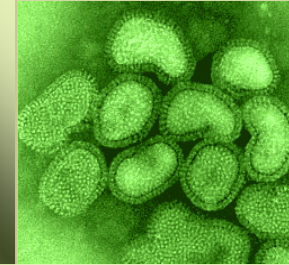
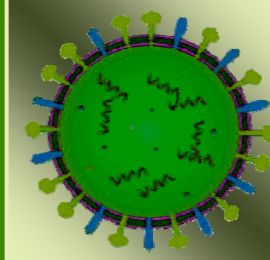
V. Progress (1)



- Through the assistance of the New Territories Chicken Breeders' Association, two local chicken farms (a medium size and a small size) agreed to participate in the field trial on a voluntary basis;
- The field trial was launched in early November 2010;
- The full-year field trial will continue for the first ten months of this year;



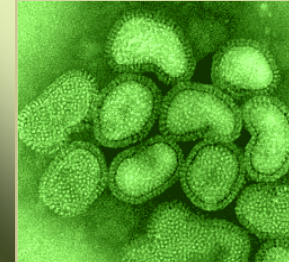
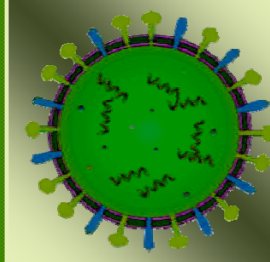
V. Progress (2)



- A comparative scientific analysis of the monitoring and testing data gathered during the field trial will be conducted upon completion;
- The following will be assessed:
 - a) Immune response of chickens to the *Re-5* vaccine as compared with the *Intervet* vaccine;
 - b) To determine any adverse or side effect occurred in the vaccinated chickens that is associated with the use of the *Re-5* vaccine under local farm conditions.

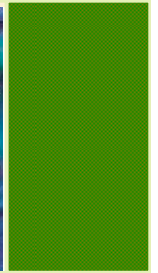
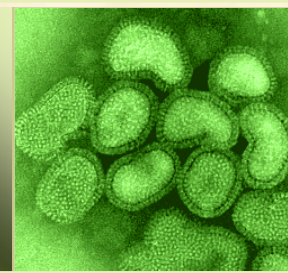
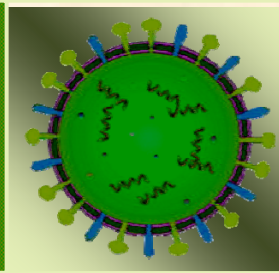
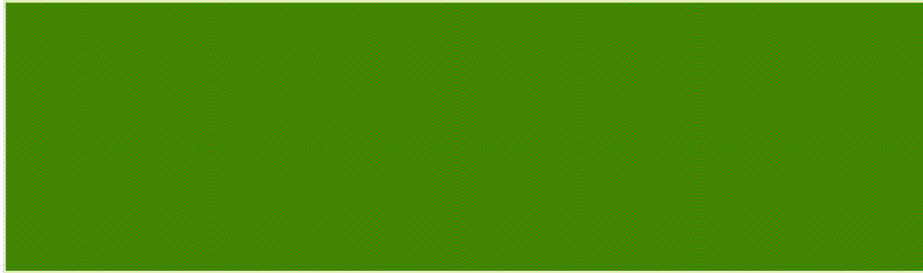


V. Progress (3)



- **IGVS will make a recommendation on the proper choice of vaccines to be used in local chicken farms on the basis of the results;**
- **The manufacturer of the Re-5 vaccine has also been informed of the requirement to register the vaccine in Hong Kong before it can be applied on local chickens.**





THANK YOU !!

