Avian Influenza Virus FAQ

1. WHAT IS THE AVIAN INFLUENZA VIRUS (AIV)?

Avian influenza (AI) is an infectious disease of birds caused by type A strain of the influenza virus. AI is a highly contagious disease and some strains can cause high mortality in poultry. Influenza A virus in the natural environment is generally spread by ingestion or inhalation. The virus is found in high concentrations in saliva, nasal secretions, and feces. AIV can remain viable for long periods in tissues, feces, and water, especially at low temperatures. Virus-laden feces and respiratory secretions present on fomites such as equipment, clothing, flies, and contaminated feed and water are effective means of transmitting the virus. Airborne dissemination is also an important means of transmission. However, AIV is among the easiest viruses to inactivate using disinfectants or heat treatment. The highly pathogenic form of the disease is systemic and may be characterized clinically by severe depression, ocular and nasal discharges, snicking, decrease in egg production, nervous system changes, edema of the head, tissue necrosis, sudden death, and high mortality. Morbidity and mortality associated with outbreaks of this highly pathogenic form may reach 90–100 percent within 1–2 weeks in susceptible poultry. Morbidity and mortality associated with the low pathogenic form is usually low unless complicated by secondary bacterial or viral infections, and environmental stressors. Depending on the size of an outbreak the measures taken to control and eradicate the virus, and the speed to implement control and eradication strategies trade restrictions may be regional or, affect the entire country resulting in significant economic losses in the poultry industry and increased costs to consumers.

Excerpt from

2. WHAT ARE SELECT AGENTS?

Select agents are biological agents and toxins listed in this part have the potential to pose a severe threat to public health and safety, to animal health, or to animal products. All Avian Influenza Viruses (AIV) that have been subtyped and classified as highly pathogenic must be regulated as select agents pursuant to 9 CFR § 121.3(b). However, AIVs subtyped and classified as low pathogenic, including H5 and H7 subtypes, are not regulated as select agents but are regulated as viruses pursuant to 9 CFR Part 122 (Organisms and Vectors).

http://www.selectagents.gov/SelectAgentsandToxinsList.html

Below is the website for the detailed Guidelines for HPAI:
3. WHY AND WHO REGULATES THE USE, POSSESSION, AND TRANSFER OF SELECT AGENTS?

The Public Health Security and Bioterrorism Preparedness and Response Act of 2002, Subtitle A of Public Law 107–188 requires the Department of Health and Human Services (HHS) to establish and regulate a list of biological agents and toxins that have the potential to pose a severe threat to public health and safety. The Agricultural Bioterrorism Protection Act of 2002 requires the United States Department of Agriculture (USDA) to establish and regulate a list of biological agents that have the potential to pose a severe threat to animal health and safety, plant health and safety, or to the safety of animal or plant products (Select Agents). CDC and APHIS share responsibility for some agents because they potentially threaten both humans and animals (overlap agents). The laws require HHS and USDA to review and republish the lists of Select Agents and toxins on at least a biennial basis.

4. HOW CAN AN ISU PI WORK WITH A SELECT AGENT SUCH AS HPAI?

Any principal investigator (PI) who intends to use, transfer or store Select Agents and Toxins must first contact the Responsible Official (RO) in the Department of Environmental Health and Safety (515-294-5359) in order to facilitate the registration of personnel and facilities before research begins. A security risk assessment of personnel and facilities will be conducted. After the registration and risk assessment have been submitted to the Federal Select Agent program, an inspection may be performed by the APHIS and/or CDC.

5. WHAT OTHER REGULATIONS MUST BE FOLLOWED?

- An IBC protocol and if animals are involved, an IACUC is necessary before HPAI research begins
- Depending on the source of the HPAI, a USDA permit may be needed.
- Depending upon the experiments to be implemented, Dual Use of Concern (DURC) Regulations may need to be followed.

6. WHAT ABOUT DURC?

- The Policy for Institutional Oversight of Life Sciences DURC applies to ISU.
- The 15 agents and toxins listed by this policy are each regulated by HHS CDC and USDA APHIS select agents, including AIV.
- The oversight from DURC is complementary to that of the Select Agent Regulations.
7. HOW WILL DUAL USE RESEARCH OF CONCERN WORK AT ISU?

- The DURC policies are still in draft form, but the IBC will serve as the oversight committee.
- Researchers will be asked in advance to identify whether their research:
  1. Enhances the harmful consequences of the agent or toxin;
  2. Disrupts immunity or the effectiveness of an immunization against the agent or toxin without clinical or agricultural justification;
  3. Confers to the agent or toxin resistance to clinically or agriculturally useful prophylactic or therapeutic interventions against that agent or toxin or facilitates their ability to evade detection methodologies;
  4. Increases the stability, transmissibility, or the ability to disseminate the agent or toxin;
  5. Alters the host range or tropism of the agent or toxin;
  6. Enhances the susceptibility of a host population to the agent or toxin;
  7. Generates or reconstitutes an eradicated or extinct agent or toxin.
- If the answer is affirmative, then the IBC may need to develop a mitigation plan in order to approve the research.

8. CAN ISU DO AVIAN INFLUENZA RESEARCH NOW?

Contact Responsible Official, Betsy Matos. She will assist you in completing the procedure to begin research as soon as possible.

Iowa State University is committed to the responsible conduct of research (RCR). Ensuring proper approvals, precautions, practices and procedures are in place when working with AIV will help the institution achieve this goal and advance understanding of disease.

9. CONTACTS

- Jerry Zamzow, Assistant Vice President for Research
  o 294-0538
- Betsy Matos, Responsible Official
  o 294-5359
- Lisa Leiden, ORR Director
  o 294-3115