

**EM TECHNOLOGY  
PREVENTIVE MEASURES  
AGAINST  
THE AVIAN INFLUENZA**

Reference: Shioya Keiko, EMRO Tokyo  
Prepared by: APNAN



# HPAI

*(Highly Pathogenic Avian Influenza)*

- Originated from birds and infects domestic fowls.
- Fever, comatose, and sudden death are typical symptoms.
- High fatality rate, and highly contagious.
- Rated as one of the most serious threats as per Office International des Epizooties (OIE)

\* *“Bird flu” shall herewith refer to HPAI*

# Links to Human Influenza

- Originally, bird flu and human flu are separate from each other.
- In recent years, high pathogenic influenza have appeared in humans.
- Nonetheless, the cases were few. But reported deaths increased from 30% in 1994 to 70% in 2004. The increase indicates a mutation in the toxicity strength.
- There is a fear of a pandemic if the virus would mutate and be transmitted from human to human.

# Overview of Bird Flu Outbreaks (1): (Virus strain / year)

- United States: H5N2 /1983
- Mexico: H5N2 /1993
- Australia: H7N7 /1975, 1976, 1983  
H7N3 /1992, 1994, 1997
- Italy: H5N2 /1997, H7N1 /1999
- Netherlands Belgium Germany: H7N7 /2003
- Hong Kong: H5N1 /1997, 2001, 2002, 2003
- South Korea: H5N1 /2003

# Overview of Bird Flu Outbreaks (2): Latest Outbreak in 2004

- Cambodia, China, Indonesia, Japan, Malaysia, Thailand, Vietnam, and Laos: H5N1
- Pakistan: H7
- Taiwan: H5N2
- Canada: H7N3
- United States: H5N2
- South Africa: H5N2

# EM TECHNOLOGY APPLICATION

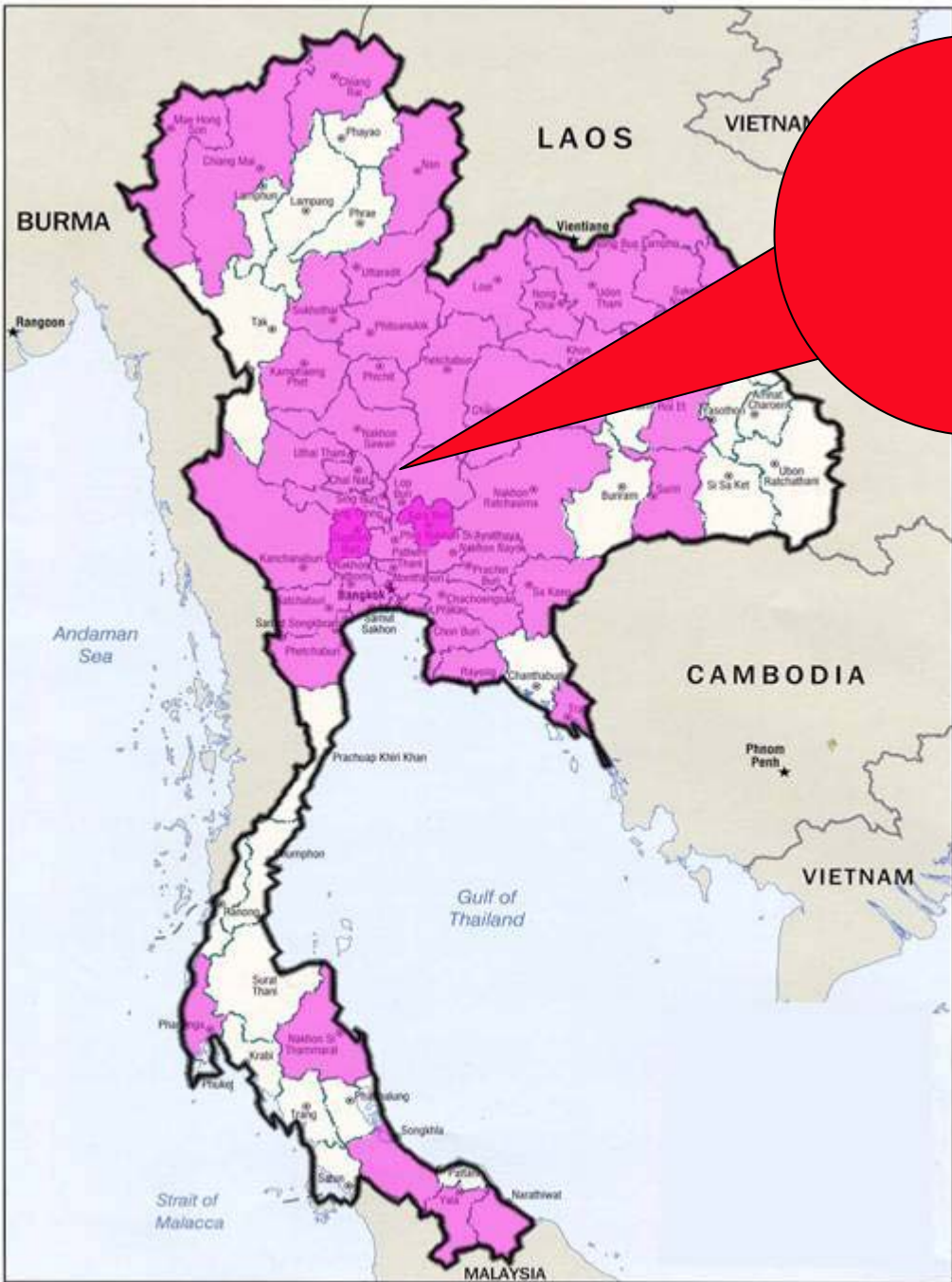
The control of H5N1 HPAI (Highly Pathogenic Avian Influenza) in Asia is a complicated task, and there are a lot of proposals and measures being presented for the control of the said virus.

***At a practical level, use EM to enhance the biosecurity of poultry farms and associated premises.***

# EM APPLICATION POINT (1) For Birds and Surroundings



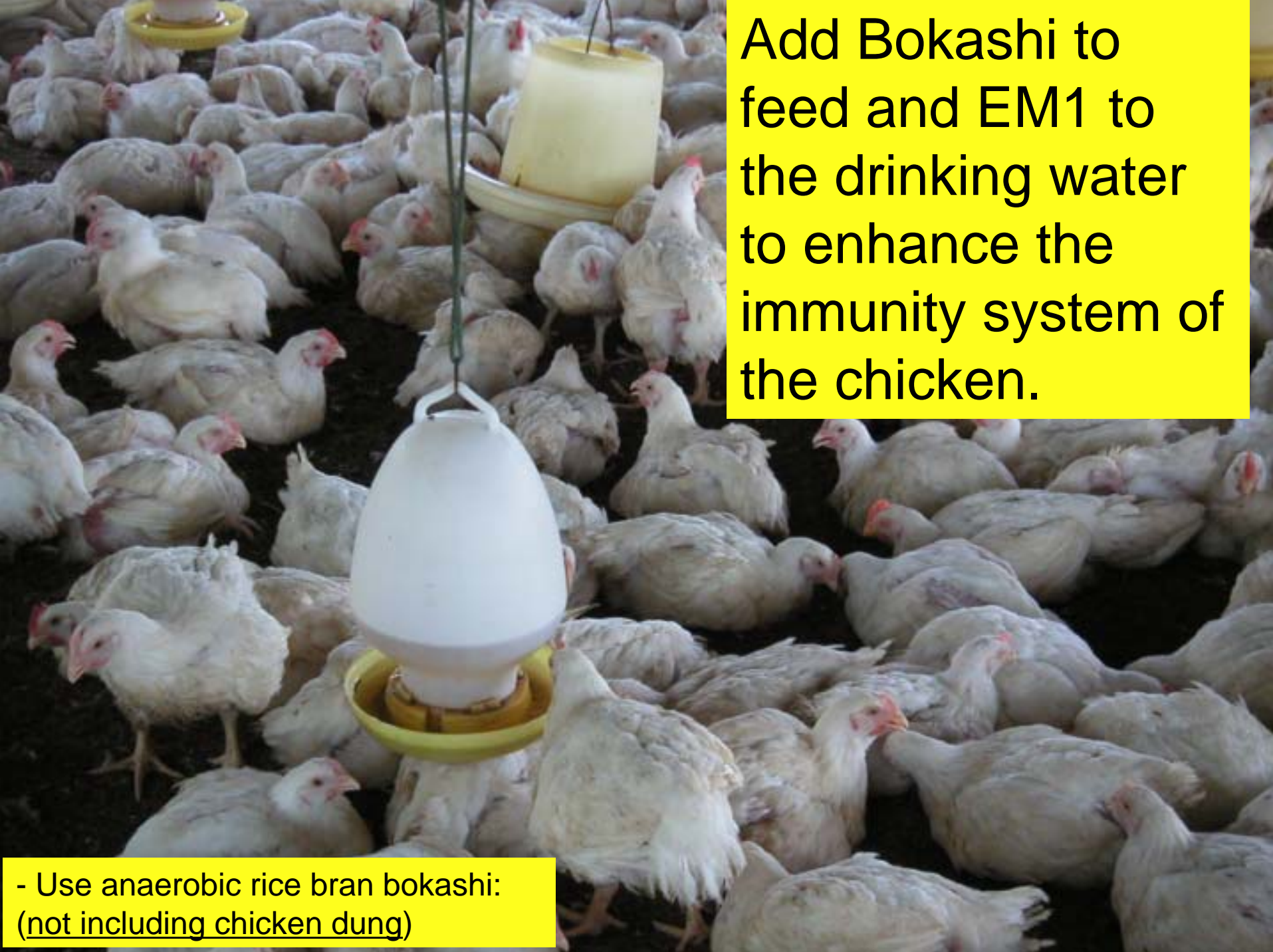




*Irrespective if the farm is located inside or outside the 10 km radius of the bird flu outbreak point, it is important to take preventive measures.*

***Spray EM 2-3 times per day,  
at a dilution rate of 1:100.***



A large flock of white chickens is shown in a farm setting. In the foreground, a white egg-shaped feeder hangs from a green cord, with a yellow circular base. Another similar feeder is visible in the background. The chickens are densely packed, and the floor appears to be dark and possibly covered with bedding or manure.

Add Bokashi to feed and EM1 to the drinking water to enhance the immunity system of the chicken.

- Use anaerobic rice bran bokashi: (not including chicken dung)

Spread Bokashi on the floor and spray EMAS diluted solution to maintain EM fermentation smell, while keeping the floor as dry as possible.



- Use anaerobic rice bran bokashi:  
(not including chicken dung)

Add EM to the water source and the drinking water, because the route of the infection is the drinking water source, such as ponds, in which wild or migratory birds fly into.



# EM APPLICATION POINT (2)

## For Workers / caretakers



# Use EM as the Preventive Measure

- Wash hands with EM dilution.
- Gargle with EM dilution.  
(Gargling, though suggested, is at the decision of the farm.)

# EM APPLICATION POINT (3)

- Spray EM1 at slaughterhouses and open-air meat markets.
- Spray EM1 at factories that process coagulated chicken blood for food.



# The Mechanism of Bird Flu Prevention

**Add EM in  
Feed / Drink**



**Enhance  
Immunity system**

**Spray  
EM and Bokashi**



**Improve  
Shed sanitation/  
environment**



**Prevent Bird Flu**



**Prevent Flu Transmission to Humans**