Update on Indonesia and Egypt OFFLU initiatives

– matching vaccines with circulating field isolates

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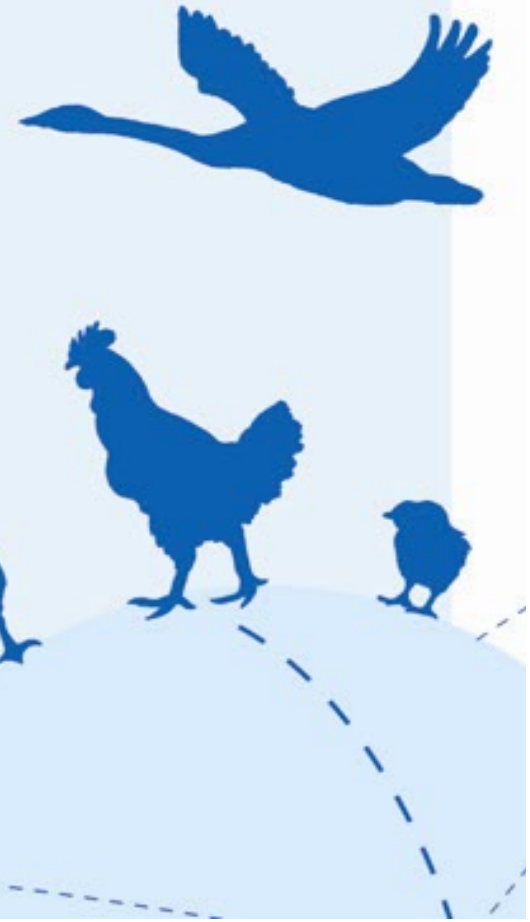
OFFLU technical meeting for head of avian influenza reference institutions and swine influenza experts, OIE, Paris, 15th and 16th September 2009, Salon Ramon

Monitoring AI virus variants in Indonesian poultry and defining an effective and sustainable vaccination strategy



Intensive HPAI field isolate collection and characterisation

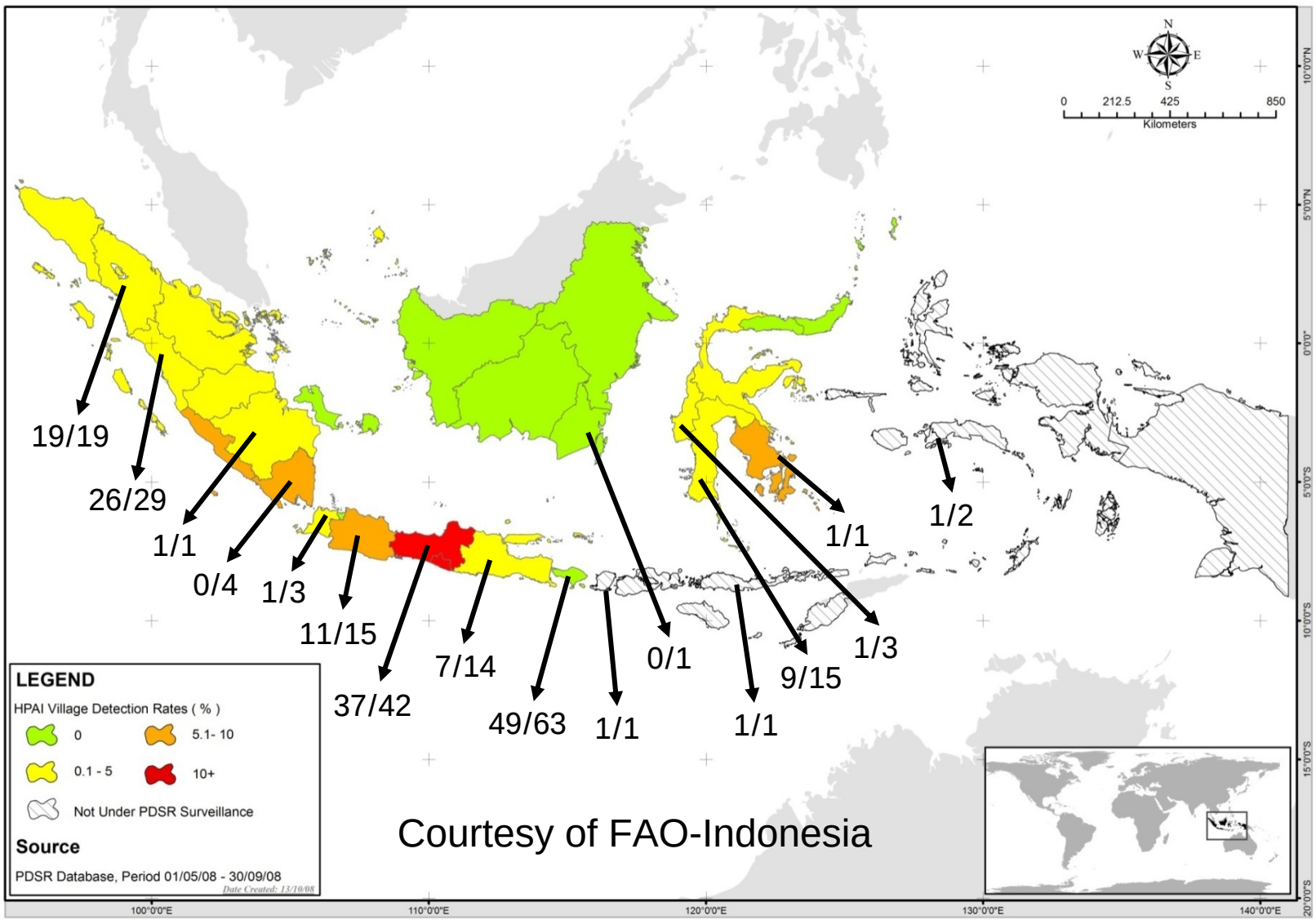
Samples received and analysed at AAHL in 2008:

- Total 214 samples:
  - 7 laboratories
  - 15 localities
  - 98 districts
  - 11 species
  - Samples collected from 2003-2008

- Predominantly from chickens during 2007 (n=185; 86%)
  - Majority from Sector 4 (village sector)
  - 25% from Sectors 1, 2 (intensive commercial sector)

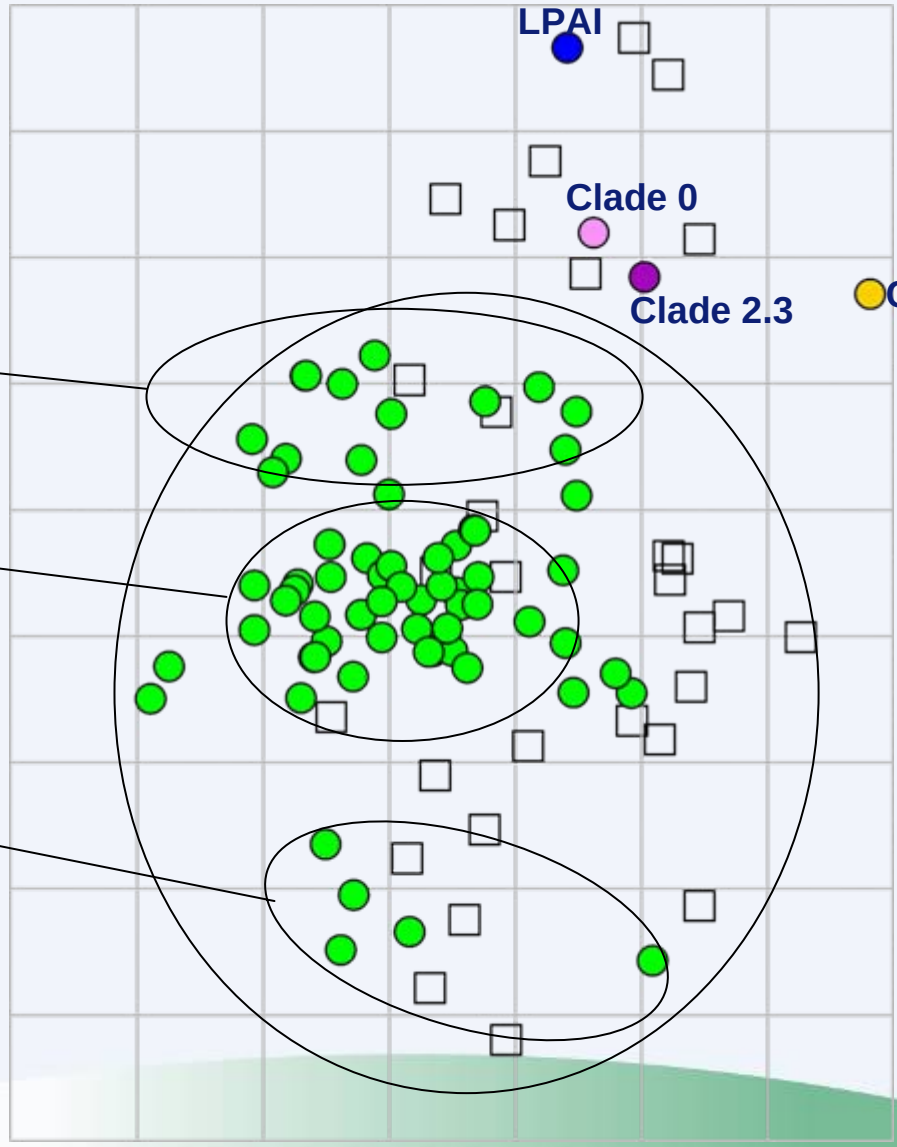
Year	Species	Location	Total
2003	chicken	East Java	1
2005	chicken	Central Java	1
		East Java	1
		Lampung	2
2006	chicken	Bali	2
		East Java	1
		West Java	4
		Lampung	1
2007	chicken	Bali	52
		Central Java	31
		East Java	11
		West Java	9
		Lampung	1
		Lombok	1
		East Nusa Tenggara	1
		South Kalimanatan	1
		South Sumatra	1
		North Sumatra	13
		West Sumatra	22
		Maluku	2
		South Sulawesi	8
		West Sulawesi	3
	dog	Central Java	1
	swine	South Sulawesi	1
	duck	Bali	7
		Central Java	1
		West Sumatra	3
	goose	Central Java	1
	muscovy duck	Central Java	2
		West Java	1
		West Sumatra	1
	peaceful dove	Bali	2
	pigeon	West Sumatra	1
	quail	Central Java	2
	turtledove	West Sumatra	1
	swan	West Sumatra	1
	soil	West Java	1
2008	chicken	Central Java	1
		West Java	1
		North Sumatra	6
		Banten	3
		South Sulawesi	7
		South-East Sulawesi	1
Grand Total			214

Geographical distribution of isolates / samples



Courtesy of FAO-Indonesia

The Indonesia antigenic map



- Awaiting final confirmation to publish existing sequence data
- Revisions to MTAs for further sharing of field isolates to include Annex for approval to publish
- Nomination of DIC Wates as focal point for antigenic cartography and consultation to develop work plan 1 July 09
- Selection and production of reference antisera and antigens for Indonesia
- Antigenic cartography data from >70 isolates in addition to biologic and molecular data was used to select 5 candidate vaccine strains and 6 potential challenge strains for further investigation. Viruses have been received at SEPRL for vaccine construct and challenge studies in June 2009
- Identification of isolates to be further tested with challenge studies and maps of Indonesia displaying the geographic and production unit coverage of identified strains.

Avian Influenza Vaccine Efficacy Project Egypt (AIVEPE) in Egypt

Australian Government
AusAID

Genetic and antigenic variants among field strains screened and evaluated (2006–early 2008)

- 42 positive samples collected from 2006 to mid-2008 were sequenced for HA genes and 18 isolates for NA genes, and a phylogenetic tree was constructed for them, providing an extensive view on HPAI H5N1 isolates circulating in the Egyptian field in farms and backyard flocks
- Sequencing continues; many genetic mutations were found in some isolates that are categorized according to the genetic variation, which helps in isolate selection for vaccine evaluation through a challenge test and for selection of a new vaccine candidate.
- First Technical Review Meeting at end of September

Intensified HPAI Field Isolate Collection 2009: In cooperation with the SAIDR project, a total of 29 isolates from positive samples collected from the 2nd half of 2008 to June 2009 were sequenced for HA genes and 16 for NA genes. The phylogenetic tree constructed gave clear and important information on the circulating HPAI isolates in the Egyptian field recently, comparing to the isolates from early outbreak. This also enhanced the possibility for isolate selection to undertake a challenge test required for vaccine evaluation. Sequences have been uploaded to Genbank.

Capacity building: NLQP and CLEVB scientists trained at SEPRL for sequencing and challenge testing in order to enhance the technical capacity of the lab and assist in improving techniques conducted in the lab.

Antigenic Cartography

- A total of 20 isolates including 6 H5 reference isolates and 14 isolates from Egypt from 2006, 2007 and 2008 have been selected based on protein sequence divergence and different years of isolation for the initial analysis. These isolates have been propagated and inactivated. Safety testing, vaccine production and chicken inoculations are in progress
- Hemagglutination inhibition (HI) assays are planned for the first week of September and the data will be submitted to the antigenic cartography group for processing immediately after completion of the HI assays
- A training session is scheduled for mid-September for two people from NLQP to visit SEPRL for training