

Salmonella in native village chickens (*Gallus domesticus*): prevalence and risk factors from farms in South-Central Peninsular Malaysia

ABSTRACT

Village chicken or Ayam Kampung, common to Southeast Asian countries, has always been regarded as superior in comparison to commercial broiler chicken in terms of wholesomeness and health benefits. The current study investigates the prevalence and risk factors of *Salmonella* among village chicken flocks from the central and southern states of Peninsular Malaysia. A total of 35 village flocks were sampled from Selangor (n = 19), Melaka (n = 10), Johor (n = 4), and Negeri Sembilan (n = 2). In total, 1,042 samples were collected; these included cloacal swabs (n = 675), eggs (n = 62), pooled drinking water (n = 175), pooled feeds (n = 70), and pooled flies (n = 60). Isolation of *Salmonella* from cloacal swabs, poultry drinking water, and feeds was carried out according to the protocols and recommendations of the World Organization for Animal Health (OIE) terrestrial manual. The prevalence of *Salmonella* at an individual bird-level was 2.5% (17/675, 95% CI: 1.6 to 4.0). All eggs screened were negative; in the case of environmental samples, however, *Salmonella* was detected in 5.14% (9/175), 7.14% (5/70), and 5.0% (3/60) for water, feed, and flies, respectively. A total of 34 isolates and 8 *Salmonella* serotypes were identified. Weltevreden (20.6%) was the most common, followed by Typhimurium and Agona (17.6%), Albany and Enteritidis (8.8%), Molade (5.9%), Corvallis and Schleissheim (2.9%), and others grouped as *Salmonella* spp. (11.8%). Multivariable logistic regression models revealed that *Salmonella* positivity among flocks could be strongly predicted by storage of feeds (uncovered feeds; OR = 10.38; 95% CI: 1.25 to 86.39; p = 0.030) and uncovered water tanks (uncovered tank; OR = 6.43; 95% CI: 1.02 to 40.60; p = 0.048). The presence of *Salmonella* in village chickens in the study area was lower than that of commercial chickens in Malaysia.

Keyword: Village chicken; *Salmonella*; Risk factor; Prevalence; Peninsular Malaysia