



13 May 2024

Diagnostic guidance: HPAI dairy cattle

Based on current information available on guidance for testing cattle for AI, PCR assays for influenza A virus continue to be recommended, followed by subtyping as per the [WOAH recommendations for molecular diagnostics of AI](#). Viral isolation using embryonated chicken eggs or cells also continues to be effective. Antigen capture methods have demonstrated variable sensitivities and antibody testing of serum in cows have been successful. Further studies are underway to understand the sensitivity and specificity of antibody testing in milk. General AI protocols and guidance including translations into multiple languages can be found here: [OFFLU protocols and guidance](#).

Milk samples have been shown to yield the lowest CT values using RRT-PCR (i.e. highest virus concentration). Few nasal swabs and urine samples have tested positive and typically yield high CT values indicating a low virus concentration. Virus has been detected preferentially in mammary gland but also lung tissue from necropsied cows¹. Milk from each of the 4 quarters (3-10mL per animal) are the preferred sample from lactating animals and deep nasal swabs should be used for non-lactating animals.

Sampling guidance is currently being developed for required testing of lactating dairy cattle for interstate movement in response to the [federal order](#). PCR testing of raw milk has been shown to be successful, samples should be processed within 48 hours of being taken and should be kept refrigerated. Aggregate onsite milk from one epidemiological unit could also be tested. See guidelines by [USDA, USA](#) and [IZSve, Italy](#) for more detailed information.

Validation for serological testing of cows is underway however there is currently little information available regarding the profile of seroconversion of HPAI infected cattle.

Different laboratories and experts involved in the OFFLU network are validating and working on guidelines and minimum requirements for diagnosis of infection in cattle. These will be shared as they are available through the OFFLU website and if countries or laboratories require protocols, they can contact [OFFLU](#).

¹ <https://wwwnc.cdc.gov/eid/article/30/7/24-0508-t3>