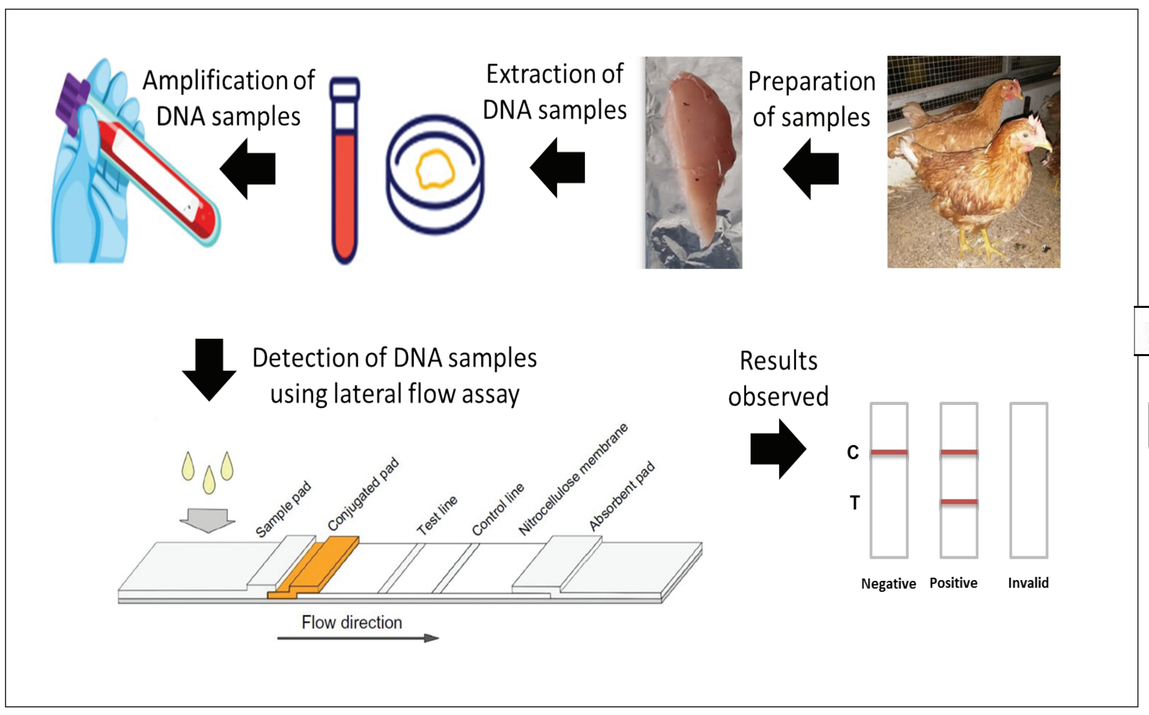
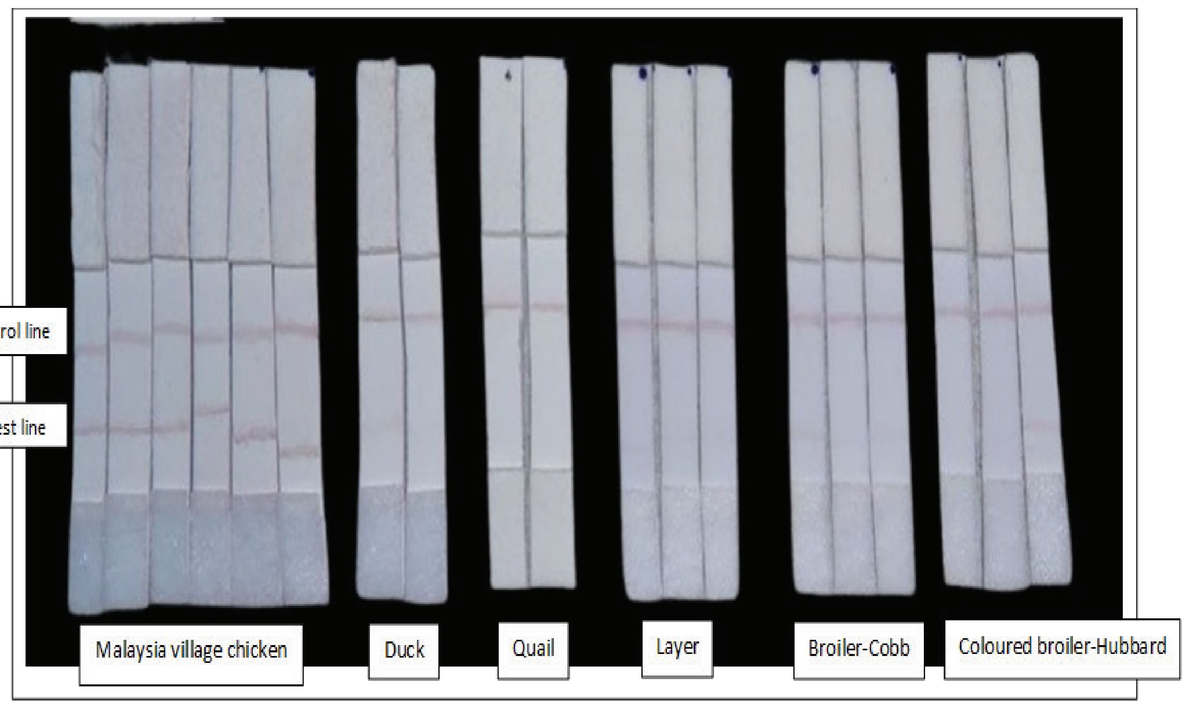
NUCLEIC ACID-BASED LATERAL FLOW ASSAY (NALFA) STRIP FOR VILLAGE CHICKEN AUTHENTICATION

PATENT NO. PI2022007534



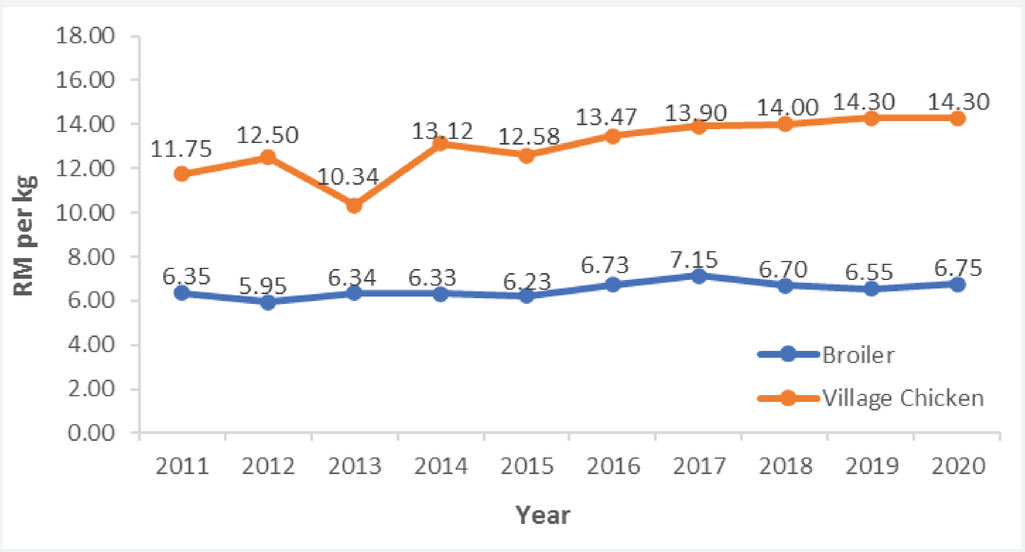


BRIEF TECHNOLOGY

Rapid nucleic acid-based lateral flow assay (NALFA) strip for village chicken authentication with the combination of rapid isothermal recombinant polymerase amplification technique.

Test format	One reaction strips for each determination
Sample preparation	Amplification of genomic DNA from tissue or blood of village chicken samples by using isothermal recombinant polymerase technique (20 mins, 40 to 42 °C)
Determination time	< 1 min
Detected analyte	Breed-specific biomarker located on chromosome one of village chicken
Evaluation	Visual

CURRENT ISSUES



- Due to the high demand for village chickens in Malaysia, there is a concern that broiler, due to their cheap cost, are claimed as village chicken to fraud consumers for economic gain.
- There is no standard strategy to authenticate different chicken breeds in Malaysia.

INVENTIVENESS & NOVELTY

- The unique aspect of this work will be its novelty regarding the breed-specific genomic region that can consider as a biomarker to differentiate village chicken from non-village chicken breeds.
- This developed portable lateral flow assay will be the first assay for the purpose of chicken breed authentication which can be beneficial for the industry for on-site detection of food frauds in Malaysia.

USEFULNESS & APPLICATION

This lateral flow nucleic acid assay provides a validated method for on-site Malaysian village chicken authentication/identification.

IMPACT OF THE PRODUCT

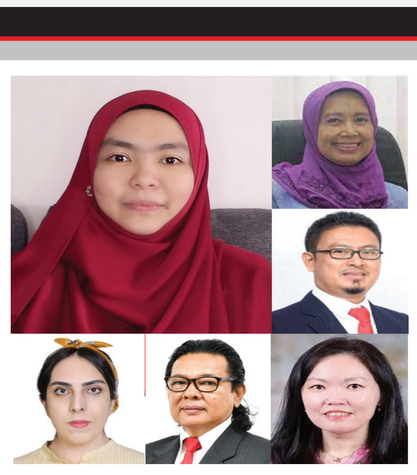
- Simplified nucleic acid assay technique using disposable strip
- Suitable for on-site monitoring
- Immediate results visualization with a naked eyes
- High sensitivity
- Disposable strip is recyclable

MARKET POTENTIAL

1. Food safety monitoring
   To ensure that village chicken is not substituted by other cheap commercial broilers.

2. Livestock monitoring
   There is fraud that some farmers sale underaged colored broilers instead of village chickens due to the same phenotype characteristics. Therefore, this methods is developed to safeguard consumers' rights and ensure fair trade.

TRL : 5 – Validation in real environment



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