

Machine Learning Dataset for Poultry Diseases Diagnostics - PCR annotated

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To access the full dataset, click that link

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Abstract

The dataset of poultry disease diagnostics was annotated using Polymerase Chain Reaction (PCR). Polymerase Chain Reaction (PCR) is a molecular biology technique for rapid diagnostics. We gathered both the fecal images and fecal samples from layers, cross and indigenous breeds of chicken from poultry farms in Arusha and Kilimanjaro regions in Tanzania between September 2020 and February 2021. Each fecal sample collected was coded to its corresponding image during data collection. PCR method is used for detection and identification of pathogens through amplification of DNA sequences unique to the pathogen. We used existing primers from literature to amplify the target DNA/RNA on the poultry fecal samples for PCR. The targets were Coccidiosis, Newcastle disease and Salmonella. We used the primers for PCR diagnostics at the molecular laboratory of the Nelson Mandela African Institution of Science and Technology (NM-AIST). The fecal samples were stored at -80 degrees celsius. The PCR diagnostics were conducted using reagents and kits from Zymo Research and the protocol is summarized in these five stages: 1. DNA sample loading 2. DNA extraction 3. Amplification; 4. Quantification and 5. Detection.