

Development of a low-dose fast-dissolving tablet formulation of Newcastle disease vaccine for low-cost backyard poultry immunisation

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The immunisation of backyard poultry is critical for maintaining healthy flocks to provide nutrition and income for low-resource farmers worldwide. A vaccine presentation for flocks of less than 50 birds could make it more affordable and accessible, increasing uptake and impact. Fast-dissolving tablets (FDT) of Newcastle disease virus (NDV) vaccine were produced by freeze drying the LaSota NDV strain combined with excipients into tablets containing a small number of doses and packaged in polymer blister sheets. The NDV-FDT vaccine maintained virus stability for more than six months at 4°C, based on plaque assay and egg infectivity dose data. Stability was further confirmed in a challenge study, where the tablet vaccine elicited a strong immune response and provided 100 per cent protection to vaccinated chickens infected with a virulent strain of NDV. The vaccine tablet can be diluted in water (no needle or syringe required) and administered either in drinking water or with a dropper via an intraocular and/or intranasal route. Results indicate that FDTs containing a small number of doses are a feasible presentation for backyard poultry farmers. The compact packaging of the FDTs will also provide cost savings in storing and distributing the vaccine in the cold chain.

Full text: <http://veterinaryrecord.bmj.com/content/174/20/504.abstract>