

A cost-effectiveness model for an on farm rapid-test for *Campylobacter* in broiler chickens

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As part of the drive to reduce human campylobacteriosis, there is a requirement to reduce the levels of *Campylobacter* in UK broiler flocks. *Campylobacter* control programmes are required and may involve several stakeholders; the poultry industry, retail sector, government and scientific researchers. A consultation of stakeholders has shown support for the use of a rapid farm-based test to support the control programme for *Campylobacter* in broilers. Several rapid test methods have potential for farm based testing. However, ideally, any new rapid test should be more cost-effective than current laboratory (culture) tests. This study has developed a mathematical model that could compare the relative cost-effectiveness of different tests for the detection of *Campylobacter* in broiler flocks. The model highlights the potential for savings using rapid tests rather than culture. Culture is only competitively cost-effective in a short-term testing situation (100 flocks over two years), not when a larger number of tests are required. Our analysis suggests that even in the short-term situation the Lateral Flow Device (LFD) rapid test would be more cost-effective than culture. Thus, as the LFD is available now it could potentially offer immediate savings over current culture methods in most testing situations. Further analysis suggests that if a rapid test can be developed that has a sensitivity and specificity of ca. 90%, set up costs of £500 and individual test costs of £12.50, it should prove more cost-effective than culture. However, this is based on the assumption that all model inputs are comparable. The generation of good comparable performance data for testing on farm samples (faeces) by LFD and the other method options are required before we can confirm these findings.