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Control of Bluetongue: an economic analysis on vaccination against Bluetongue in the Netherlands

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In an economic analysis eight possible BTV8 vaccination strategies for the expected epidemic of 2008 in the Netherlands were ranked based on economic parameters. The evaluation of the vaccination strategies is based on a comparison with the baseline scenario: the expected epidemic in 2008 where no vaccination is applied. The economic impact for the baseline epidemic is estimated at 40.9 million Euros. Subsequently, the economic impact has been estimated given different voluntary vaccination strategies. The reduction of the economic impact due defines the economic benefit. The costs of the vaccination strategy were estimated with and without EU compensation of 100% of the vaccine costs and 50% of the veterinary costs. Based on the costs and benefits, the cost-benefit ratio, net profit (benefits minus costs) and total vaccination costs were calculated.

Based on the economic criteria, we conclude that vaccination of all adult sheep in the Netherlands and all adult cattle in the four Northern provinces is the best vaccination strategy to control the BT epidemic in 2008. The cost-benefit ratio of this strategy is 0.35, indicating that each €0.35 of costs results in €1.00 of benefits. With the EU-compensation this ratio is 0.17. The net profit of this strategy compared to the baseline epidemic is 16.2 million Euros and 20.9 million Euros without and with the EU compensation respectively. Whereas 8.7 million Euros vaccination costs should be made of which 4.7 million Euros will be compensated by the EU. The second best vaccination strategy is vaccination of all adult cattle in the four Northern provinces. Without the EU compensation, the cost-benefit ratio of this strategy (0.27) is 1.3 times lower than the ratios of the first strategy, its net profit (7.8 million Euros) 2.1 times lower, and vaccination costs (2.8 million Euros) 3.1 times lower than the first ranked strategy. The third ranked strategy is to vaccinate 80% of all adult cattle, sheep and goats in the



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Netherlands. Without the EU compensation, the corresponding cost-benefit ratio (0.47) is 1.3 times higher than the first ranked strategy, net profit (14.7 million Euros) 1.1 times lower, whereas vaccination costs (12.8 million Euros) are 1.5 times higher as the first ranked strategy. From the sensitivity analysis it can be concluded that the ranking of the vaccination strategies will not change when the expected number of BT infected farms (and economic impact) becomes higher or lower.