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Ingrid M.J. Scholtens, Theo W. Prins, Rob J.C.F. Margry, Harald Dahlmans, Leo W.D. van Raamsdonk

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Applicability of the poultry qPCR method to detect DNA of poultry processed animal protein materials

Ingrid M.J. Scholtens[a*], Theo W. Prins[a], Rob J.C.F. Margry[b], Harald Dahlmans[b], Leo W.D. van Raamsdonk[a]

[a]*RIKILT Wageningen University & Research, Akkermaalsbos 2, 6708 WB, P.O. Box 230, 6700 AE Wageningen, Netherlands*

[b]*NutriControl, P.O. Box 107, 5460 AC Veghel, Netherlands*

*Corresponding author: Tel: +31 317 481995

E-mail addresses:
ingrid.scholtens@wur.nl (I. Scholtens)
theo.prins@wur.nl (T. Prins)
rob.margry@gmail.com (R. Margry)
harald.dahlmans@nutricontrol.nl (H. Dahlmans)
leo.vanraamsdonk@wur.nl (L. van Raamsdonk)

Abstract

After the Bovine Spongiform Encephalitis (BSE) crisis most processed animal proteins (PAPs) were banned from use in animal feed. For the foreseen reintroduction of pork PAPs in poultry feed, and poultry PAPs in pork feed and to comply with the species-to-species ban that prohibits cannibalism, a sensitive and specific TaqMan PCR detection method for poultry DNA has been designed and published. This poultry method is able to detect DNA of chicken, turkey, duck and geese in one PCR reaction. PAPs however, are a difficult and variable matrix. Therefore, the usability of the poultry method was investigated on a range of different poultry PAPs. It was shown that the poultry detection method is capable of detecting poultry DNA in eight out of nine different poultry PAPs mixed at a 0.1% level in chicken feed. The method can also detect at least 0.1% poultry PAPs mixed in pork PAPs. These results show that the poultry method fulfils the 0.1% detection limit requirement in the EU legislation.

Keywords

Sensitivity; poultry; chicken; turkey; duck; geese; species-to-species ban; feed, Processed Animal Proteins (PAPs); Transmissible Spongiform Encephalopathy (TSE); Bovine Spongiform Encephalopathy (BSE).