GLM - a case study: Antagonistic relationships between fungi and nematodes

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The aim of this study was to confirm the influence of a particular set of fungi on the scion of nematodes. The seasonally collected data of the proportions of successful scion of the nematodes influenced by the selected fungi provided for this study comprised of only four replicates using six different fungi. Considering that the response was a continuous variable in the interval [0, 1] meant that it could be analysed as a quasi-binomial variable using a generalised linear model (GLM) [1]. In order to confirm the evidence of a practically apparent relationship using such a small data set the response was treated as a specific quasi-binomial variable with a logit link and variance function of the form $\mu(1 - \mu)^2$ [2].

The talk illustrates the analysis of the problem and shows how the family argument of the glm function in R had to be expanded in order to enable the application of this specific quasi-GLM that accommodates this particular link and variance function.

References
