

This paper presents a review of pollutant dispersion modelling from non-point sources, focused on agricultural and bioaerosol sources. Relevant non-point source characteristics were collated from a literature review. These values were used to describe a 'typical' agricultural source using line, area, volume and jet source types in the plume dispersion models ADMS and AERMOD; predicted downwind pollutant concentrations are compared. The modelling shows that predicted ground-level concentrations beyond approximately 100 m downwind are similar for the majority of non-point source types. ADMS and AERMOD were used to represent releases from four sheds housing intensively farmed poultry as a case study. When the emission and volume flow rates used in the modelling were derived from measurements, the models give reasonably accurate predictions. However for releases with non-negligible efflux, modelling using non-point sources allowing for the momentum and buoyancy of the release has much better agreement with observations than those that do not.

