CALPUFF Modeling of Odor/PM10/PM2.5 in the Vicinity of Poultry Farms

임광희†, 이은주, 이재영, 이재혁, 이재호
대구대학교
(khlim@daegu.ac.kr†)

In this study, CALPUFF modeling was performed, using a real surface and upper air meterological data to predict trustworthy modeling-results. Pollutant-releases from windscreen chambers of enclosed poultry farms, P1 and P2, and from a open poultry farm, P3, and their diffusing behavior were modeled by CALPUFF modeling with volume sources as well as by finally-adjusted CALPUFF modeling where a linear velocity of upward-exit gas averaged with the weight of each directional-emitting area was applied as a model-linear velocity at a stack, with point sources. In case of volume source-adopted CALPUFF modeling, its required removal efficiencies of both ammonia and PM10 at not only P2 but also P3 were predicted higher than those of point source-adopted CALPUFF modeling. Nonetheless, the volume source-adopted CALPUFF modeling was preferred as a safe approach to resolve civil complaints. Accordingly, the required degrees of pollution prevention against ammonia, hydrogen sulfide, PM2.5 and PM10 at P1 and P2, were estimated in a proper manner.