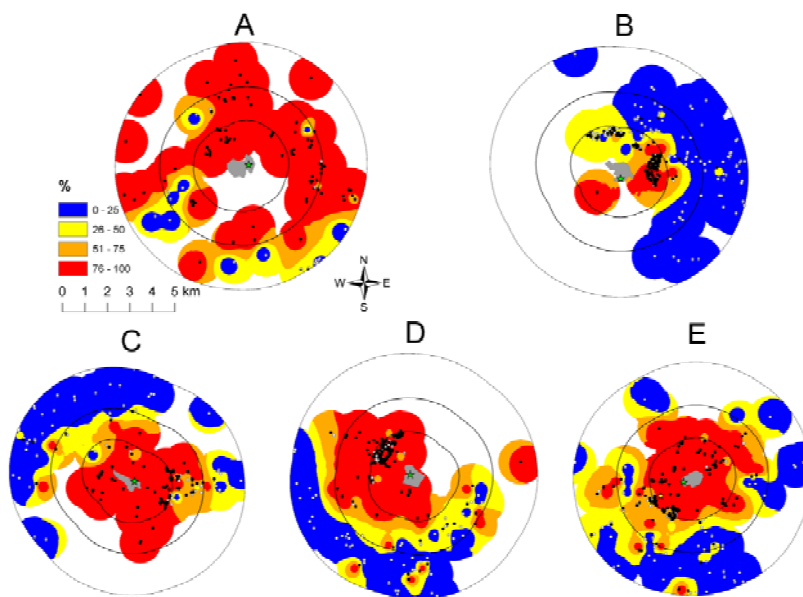


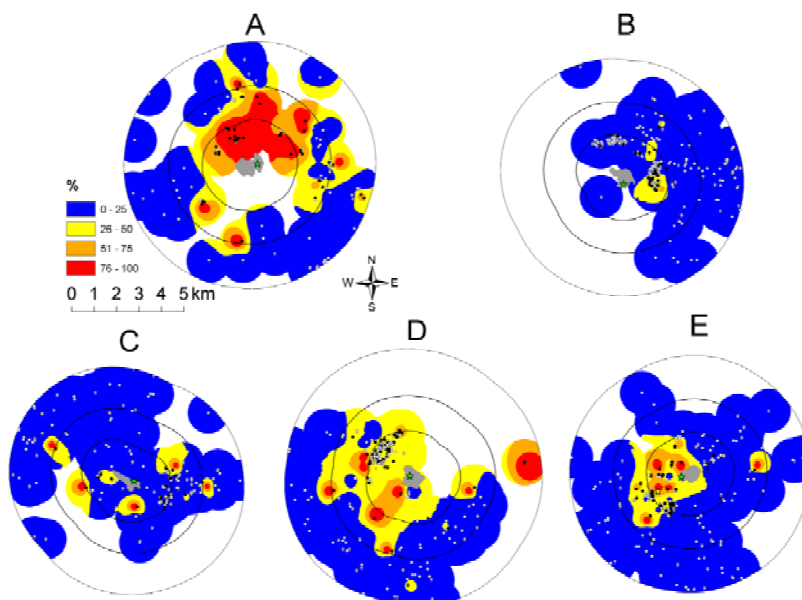
Perception and Annoyance of Odour from Large-Scale Waste Treatment Centres: A Telephone Survey in Finland, 2006

Marjaleena Aatamila, Kari Pasanen, Aino Nevalainen and Pia Verkasalo
National Public Health Institute, Department of Environmental Health
P.O. Box 95, FIN-70701 Kuopio, Finland

Decomposition of biodegradable waste at large-scale waste treatment centres causes environmental odour and, subsequently, also conceivable nuisance at least among some residents of the nearby areas. We investigated perception and annoyance of odour from five municipal waste treatment centres in a cross-sectional telephone survey carried out from May to June 2006. The 1,142 interviewees were randomly selected Finnish-speaking residents, aged 25–64 years, and living in detached or terraced houses located closer than five kilometres from a waste treatment centre. In addition to landfilling of municipal waste, the selected waste treatment centres were composting source-separated biowaste and/or sludge. The questionnaire included roughly one hundred items focusing on odour perception and self-reported health during the preceding 12 months. The overall response rate was 76.3%. Odour perception was asked as follows: “Have you perceived in your residential area any odour from the waste treatment centre?” and odour annoyance as follows: “How annoyed are you with the odour from the waste treatment centre?” The distances between the residences and waste treatment centres were calculated with a geographic information system (GIS). At the distance of less than 1.5 kilometres, the proportion of subjects that had perceived the odour varied between 65% and 100%, depending on the centre. At the distance from three to five kilometres, the respective proportions were between 2% and 64%. The results were visualized using GIS to produce interpolated smoothed maps that elucidate the spread of odour by the geographical location of the respondent’s residence as shown in Picture 1. The proportion of respondents who perceived the odour to be extremely or fairly annoying varied between 14% and 83% at the nearest distance and between 0% and 10% at the furthest distance. These differences are clearly illustrated by Picture 2. In conclusion, the distance at which the odour was perceived was longer than expected and varied by the waste treatment centre.



Picture 1. Odour perception in the vicinity of 5 waste treatment centres. Black dots represent respondents who reported perceiving odour from the centre, white dots those who did not perceive the odour.



Picture 2. Odour annoyance in the vicinity of 5 waste treatment centres. Black dots represent respondents reporting the odour to be extremely or fairly annoying, white dots those who did not perceive such annoyance.