"Planning Livestock & Poultry Facilities for Reduced Odor Risk: Using tools like OFFSET and the NOFT"

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The webcast is archived at:
http://www.extension.org/pages/55408/planning-livestock-poultry-facilities-for-reduced-odor-risk

Can the setback distances be modified with certain types of vegetative cover?
Rick Stowell: Vegetative cover does influence odor transport and there is the capability in dispersion modeling programs to adjust 'surface roughness' to account for the beneficial influence of varying ground cover (e.g. using trees and other vegetation to create an undulating surface). For the NOFT, however, we made the conservative assumption that surrounding land was either in crops or grassland. From a facility-planning perspective, one should have assurance that the vegetative cover will maintain its 'rough' surface condition over the life of the facility if a less conservative assumption is made.

How far can odor travel from the source to and still remain offensive, given average wind force?
Rick Stowell: The distance odor travels depends on the emission rate of the source and overall atmospheric conditions. 'Average wind force' varies by location and season, but typical wind conditions in Nebraska produce an unstable atmosphere. For these 'typical conditions' the mixing properties of the air will act to quickly reduce ground-level odor concentrations. From a facility-planning perspective, it is usually much more useful to know the odor risk presented (frequency of exposure) than it is to know how far the odor will travel for any given time or set of conditions.

How effective physical barriers such as windbreaks are in reducing odors?
Rick Stowell (supplemental to Larry's on-video comments): The effects of 'vegetative environmental buffers' are covered in greater detail in the LPELC February 2010 webcast. Relative to effects on separation distance, VEBs create a localized 'wind shadow'. Within this protected area, odor risk should be reduced, but the benefit of a VEB for residents further downwind appears to be minimal. Therefore, we recommend that NOFT setbacks not be adjusted, but rather that the odor risk of protected areas be noted as being reduced.