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From: Brownfield, Jill [jbrownfiel@state.pa.us] on behalf of AG, CHBcomments [CHBComments@state.pa.us]
Sent: Monday, October 26, 2009 2:55 PM
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Subject: FW: Dog Regulation Comments
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-----Original Message-----
From: Bob Mikesell [mailto:rem9@psu.edu]
Sent: Monday, October 26, 2009 2:21 PM
To: AG, CHBcomments
Subject: Dog Regulation Comments

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October 26, 2009

My name is Dr. Robert Mikesell, Senior Instructor and faculty member in the Department of Dairy and Animal Science at Penn State. My background is in livestock production and I have over 20 years of experience in managing confined animals. My Phd research was in the field of livestock odors, odorous compounds, and management strategies to reduce odors from livestock farms. Within the past two years, I played a large role in developing the regulations for the odor section of the Act 38 Nutrient Management Regulations in cooperation with the State Conservation Commission. Given my practical background and research interest in animal housing and ventilation in relation to odors and gasses, I was asked to participate in the early stages of the Pennsylvania Dog Law regulatory process, specifically on the ventilation section. This testimony is intended to offer some scientific and practical comments on the promulgated regulatory package.

Comments on Section 28a.2. Ventilation

1. Subsections 1,2,and 3 are well worded, easily measured, and would ensure adequate ventilation for confined dogs in nearly all cases.

2. Section 4. Field-based ammonia testing is not inexpensive nor is it terribly accurate. Three general categories of ammonia measurement options exist[1]:
    a. Passive diffusion tubes (the least expensive measuring device) cost approximately $4-$6 each and are not reusable. For most accurate results, tubes should be in place for 10 hours. Accuracy is generally +/- 20%.
    b. Pull tube equipment is much faster, but requires a $380 handheld sample pump plus a $4-$6 tube for each sample collected. Accuracy is +/- 25%.
    c. Electrochemical handheld devices must be calibrated periodically and cost more than $1500 each, but may be reused. Accuracy is +/- 9 ppm.

    None of the available ammonia measurement devices exhibit acceptable accuracy when considering a 10 ppm ammonia threshold. In my experience, if temperature and relative humidity are at acceptable levels, ammonia is generally controlled. The threshold ammonia level used for most livestock buildings (and the National Institute for Occupational Health and Safety) is 25 ppm. At 10 ppm, people may or may not notice ammonia odors. I would suggest allowing enforcement officers the discretion of measuring ammonia if they perceive obvious ammonia odor when entering the building, and would suggest using 25 ppm as the regulatory threshold.

3. Section 6. The intent of requiring an emergency ventilation backup system is excellent. However, I would suggest including an electrical generator as a viable option in addition to the listed building openings.

4. Section 7. The practical measurement of particulate matter is somewhat similar to that of ammonia. Expensive equipment would be required, the process would be complex and time consuming, and results would be difficult to repeat. Again, in my experience if temperature and relative humidity are acceptable, particulate matter (dust) should not cause air quality problems.

5. Section 8. The measurement of air exchanges is, in my opinion, untenable from an enforcement officer's perspective. The calculations are cumbersome, complicated, and not repeatable because of changes in fan capacity in response to changing temperatures (for mechanically ventilated buildings) or wind speed (for naturally ventilated buildings). Additionally, if sections 1,2, and 3 are in compliance, Section 8 will be in compliance as well.

6. Section 9. The list of conditions "associated with poor air quality" could easily be a result of other factors. For example, the presence of blood may be a result of whelping. As written, the regulations would prohibit any sickness or physical abnormality, whether ventilation-related or not. I would suggest eliminating this list or at least condensing it to three symptoms that would strongly suggest poor ventilation:
    a. (i.) excessive panting
    b. (v.) huddling of dogs 12 weeks of age or older
    c. (vii. and viii combined) red or runny eyes

7. Section 10. Again, section 10 is redundant and is covered adequately in sections 1-3.

In summary, it seems that the regulation authors included all possible approaches to measure air quality without regard to regulatory cost, complexity, accuracy or practicality. The requirements in sections 7, 8, 9, and 10 are simply redundant and, in some cases, overly intricate methods of establishing that kennel air quality is acceptable. Sections 1-3 could easily stand alone to establish acceptable air quality in dog kennels.

Please review the suggested changes and give thoughtful consideration to eliminating the requirements in sections 7, 8, 9, and 10. I would be happy to answer any questions at 814-865-2987 or rem9@psu.edu.

Sincerely,

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[1]Wheeler, E. F., R.W.J. Weiss, and E. Weidenboerner. 2000. Evaluation of instrumentation for measuring aerial ammonia in poultry houses. J. Appl. Poultry Res. 9:443-452.