We stink?
Odor studies say “no!”

Also inside…
Eldon McAfee’s final installment on Nuisance Lawsuits
2006 World Pork Expo preview
Recent Odor Studies Produce Encouraging Results

Critics continue to tell everyone who will listen that Iowa pork production stinks. The results of two recent studies say otherwise and provide proof that hog farmers are doing an excellent job of controlling odor!

Results of a three-year study by the Iowa Department of Natural Resources (DNR) completed last year showed that Iowa livestock farms are not creating widespread odor problems. A recently completed 16-month study of air quality around Iowa hog farms by Iowa State University (ISU) found that activities inside the home cause more odor problems for rural residents than neighboring hog farms. The ISU study was partially funded by the National Pork Board.

ISU Study: Neighboring homes’ air quality not impacted by hog farms

The ISU study found that proximity to hog farms does not affect air quality inside neighboring homes as much as the activities that take place inside the residences.

Researcher Steven Hoff, who works in the ISU Department of Agricultural and Biosystems Engineering, measured the levels of hydrogen sulfide and ammonia taken outside and inside homes located near hog operations in 2004 and 2005. The study looked at hog confinements ranging from 1,200 to 4,800 hogs.

The study found inside-the-home ammonia levels were consistently higher than outside levels and “it was not related to whether or not the home was upwind or downwind of any animal source in the area,” Hoff said. The study showed a “disjunction” between the inside ammonia levels and what’s going on outside the home.

“Inside sources” are suspected of causing the elevated ammonia levels in the homes. One of the ammonia sources could be traced to a litter box. In one, there was smoking inside the home, and in another, pets were kept inside the home. Hoff says they’re still looking for sources inside the home that could contribute to the ammonia levels, and they’ve put together a test lab at Iowa State to look at the inside sources.

These results support a previous study conducted by the Department of Health and Human Services in Missouri in 2003.

DNR Study shows hogs not causing wide-spread odor problems

The DNR took more than 1,700 measurements around Iowa and found just seven percent of the air samples in and around livestock facilities exceeded the level that would make them a problem.

In addition to measuring odor levels, the study also looked at trends associated with various livestock species, sizes of operations, types of operations, conditions and manure application methods.

“We wanted this to be an unbiased, straightforward study to assess odors using the technology available to do so and I believe we’ve succeeded in producing such a study,” said Wayne Gieselman, division administrator for the Environmental Services Division of the DNR.

Iowa does not currently have any odor standards or regulations. For the purpose of the study, the current standard used by the state of Wyoming that uses a 7:1 dilution level recorded on a device known as a scentometer was utilized to determine “exceedances.”
Odor exceedances are minimal

Of the seven percent of the measurements that revealed excessive levels, 11 percent were associated with manure application and seven percent were associated with livestock facilities. Only four percent of the measurements taken at public use areas, educational institutions, religious institutions, residences and commercial enterprises topped the allowable limits.

It comes as no real surprise that the DNR found manure stored outside barns in lagoons or tanks produced stronger odors than liquid animal manure stored under the barns in deep pits. Injection of liquid manure resulted in a lower exceedance rate than surface application with subsequent incorporation. Also, the exceedance rate was not directly correlated to the size of an animal feeding operation. The way the manure was managed played a significant role in determining the odor exceedance rate measured.

The study, overall, did not indicate widespread odor problems at locations afforded special setback considerations under law such as the public use areas, educational institutions, religious institutions, residences and commercial enterprises, according to Gieselman.

“The study also indicates that at least some of the odor problems we may have out there could be taken care of with better management practices, application methods or different storage systems,” Gieselman said.

The odor study, which was required as part of legislation passed in 2002, was halted in 2005 because funding was depleted.

The ISU study confirms some of the DNR findings, according to Hoff. The DNR did not have any measurements that exceeded the “health effects value” level set for hydrogen sulfide, which he says is very similar to what he found in his work. Hoff looked at some smaller hog confinements, but his findings “are very much in line with what the DNR is finding.”

Hoff’s study doesn’t mirror the DNR study and is different because he looked simultaneously at the inside air levels as he measured the outside levels.