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## 533-10 Continuously Measured Annual Ammonia Emissions from Southern High Plains Beef Cattle Feedyards.

*Monday, 6 October 2008*

*George R. Brown Convention Center, 371E*

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The magnitude of ammonia emissions from beef cattle feedyards varies with season during the year, but studies of continuous measurement of ammonia emissions throughout the year are rare. The quantification of annual ammonia emissions will improve emission factors, provide databases that can be used to verify process models of ammonia emissions, and elucidate the effects of changing climatic variables on emissions. Our objective was to quantify daily ammonia emissions from two feedyards over the course of a year. Feedyards were instrumented with continuously operated tuned diode open path lasers and chemiluminescence sensors used to measure atmospheric ammonia concentration and 3-D sonic anemometers used to measure atmospheric turbulence. An inverse dispersion model quantified ammonia emissions using measured concentrations and turbulence statistics and other variables as model inputs. Daily and mean monthly ammonia emissions and emission factors were reported for a calendar year. Emissions were correlated with climatic and feedyard management factors.

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