Effect of Simulated Rain on Ammonia Volatilization from Urea Broadcast to Pine Plantations. (S08-kissel151814-Oral)

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Abstract:

Urea fertilizer is typically applied to mid-rotation pine plantations in the SE US during October-March, when air temperatures are cooler, to minimize ammonia volatilization. The effect of rainfall following urea application on the loss of ammonia is unknown. The objective of this study was to determine the effect of rainfall amount on the ammonia lost from surface applied urea fertilizer. Losses were measured in the field using volatilization chambers to which different amounts of simulated rainfall was applied following urea application. Rainfall of up to 40 mm either had no effect, increased loss, or decreased loss, depending on the study. However, the overall tendency was for rainfall to increase the loss of ammonia, probably because the infiltration of water was not effective in moving urea into the soil and because the rainfall increased soil moisture, which has been shown in our previous studies to increase the rate of ammonia volatilization.

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