

ENVIRONMENT

Title: Establishing Effects of application of Swine Manure on Crop Leaf Damage to Growing Crops - **NPB #02-193**

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Abstract: Swine manure from a below barn storage facility was applied to growing corn and soybeans to determine phytotoxic effects. The manure had an electrical conductivity of around 20 mmhos/cm and was diluted for treatment at full, half, quarter and none. The manure mixtures were applied at a rate of 0.5 in/acre using a procedure that wet the foliage three times in a 15-minute time span. Manure mixtures were applied at V7 and V14 for corn and V3 and R1 for soybeans. Phytotoxic effects were shown at the high rate for both crops, but soybeans were killed at the early application date. Yields were decreased at the 20 EC rate for the first application by 89% and 15% for the soybeans and corn, respectively. At the second application the 20 EC mixture decreased yields by 45% for the soybeans and increased yields by 13% for the corn. For both soybean stages EC values of 12 and 6 decreased yields 8% and 6%, respectively. For the V8 application on corn, the 12 and 6 EC mixtures decreased yield 12% and increased yield 4%, respectively. For the V14 application on corn the 12 and 6 EC mixture increased yields 10 and 13%, respectively. Phytotoxicity ratings of leaf burn, stunting and leaf area generally showed results consistent with yield influences. These results indicate that applications of manure with an EC of 6 or less will most likely be safe for mid-season applications to both soybeans and corn.

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