Residue Decomposition in Non-Thermal Kentucky Bluegrass Seed Production Systems. (S06-umiker191917-Poster)

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Abstract:

Open-field burning of Kentucky bluegrass residues is a major air-quality concern in the Northwest. A non-thermal strategy that reduces residue and controls disease and weeds while maintaining seed yield is necessary to sustain the industry. N-rich canola meal (C:N=9), a by-product of canola oil production, has potential to increase degradation of bluegrass residue (C:N=35). In addition, Brassica crops such as canola contain glucosinolates, that are linked to pest and disease control. Meals from high and low glucosinolate varieties, Dwarf Essex and Athena respectively, were incubated at 25 degrees C with bluegrass residue and soil (C:N=13). Carbon dioxide was monitored in the headspace as well as total N and C in the residue and soil. Carbon dioxide was usually higher for meal-amended samples than for the control samples without meal. After 3 months the C:N ratio of soil amended with residue and meal decreased to 10-11 without a significant increase in total C. Ammonium was up to 18 times higher in meal-amended samples while nitrate was only slightly higher. Canola meal has the potential to decrease bluegrass residue and increase nitrogen promoting high seed yields.

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