Can a Sequence of Green Manures Replace Chemical N as a Fertilizer Source for Sweet Corn ?. (A08-scholberg180657-Poster)

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Abstract:

The last century of American agriculture has been characterized by a shift towards highly specialized cropping systems that greatly depend on external non-renewable resources. Improved integration of green manure (GM) in conventional systems can improve soil nutrient retention and soil fertility and these crops also provide habitats for beneficials. Successful use of GM is often hampered by the lack of precise information on the amount of N that is being provided to subsequent crops. Yield response of sweet corn to Sunn-hemp and/or Lupine residues applied at 8 and/or 4 t dm/ha and supplemented with 0, 66, or 133 kg N were determined. Non-covercrop treatments receiving 0,66,133, 200 or 266 kg N were used for comparison. Supplementing a double-cover crop with 133 kg N resulted in corn yields comparable to conventional corn fertilized with 200-266 kg N. Although initial plant growth for zero-N GM plots was superior to controls, marketable corn yield were still very low (<8% of maximum yield). Differences between single covercrops (winter vs summer) were small and/or non-significant. Effects of covercrops on soil parameters and soil nematode counts will also be discussed.

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