Comparison of Winter Cereal Cover Crops for Residual Soil N Recovery and Rice Growth in a Paddy Field. (A06-komatsuzki205220-Poster)

Authors:

- M.Komatsuzaki* - *Ibaraki University, Japan*
- M.G.Wagger - *North Carolina State University*

Abstract:

Paddy field rice can conserve N in the soil under flooded conditions, however, residual soil N represents a potential environment concern when fields are no longer flooded. Winter annual grass cover crops may provide an alternative means to conserve residual soil N following rice harvest. A field experiment was conducted in Japan to compare dry matter and N accumulation of rye, oat, triticale, wheat and fallow (no cover) in relation to soil residual N level and subsequent rice growth following cover crop residue incorporation. Dry matter and N accumulation by the following April were of the order rye>triticale>wheat=oat>fallow, while residual soil N levels followed a reverse order. Rice growth following residue incorporation was significantly affected by cover crop species, due primarily to differences in decomposition rates, because their C/N ratio had been different. Rice growth was significantly reduced by a rye cover crop, while rice yields following oat were greater than the other treatments. These results will help to determine the best cover crop for paddy fields.

Corresponding Author Information:

Masakazu Komatsuzaki
Ibaraki University
320-1, Asahi-cho, Tomobe-machi, Nishiibarakigun
Ibaraki 309-1717
Japan

phone: +81.296.78.4223
fax: +81.298.88.8707
e-mail: komachan@agr.ibaraki.ac.jp

Presentation Information:

Presentation Date: Tuesday, November 12, 2002
Presentation Time: 2:00-4:00 pm
Poster Board Number: 626

Keywords:
rice, cover crop, residual nitrogen, rye