ERIC D. KERR¹", ROBERT G. WILSON¹, AND PAUL PROVANCE², ¹University of Nebraska Panhandle Research & Extension Center, 4502 Avenue I, Scottsbluff, NE 69361, and ²Foreign Agricultural Service, USDA, Room 5936-S, Tobacco, Cotton and Seeds Division, Washington, DC 20250. - The effect of oil radish and yellow mustard trap crops on soil populations of Heterodera schachtii and subsequent infection severity on sugar beet. Studies on effectiveness of oil radish and yellow mustard trap crops for control of the sugar beet nematode, Heterodera schachtii, are needed before the system can be used in sugar beet production areas of western Nebraska and surrounding regions. Experiments were designed to compare (1) 'Pegletta' and 'Nemex' oil radish, 'Maxi' yellow mustard, rye, 1,3-D soil fumigation, and fallow, and (2) oil radish 'Nemex', dry beans, and dry beans + 1,3-D soil fumigation, for control of H. schachtii. The crops were planted in early April, July, or September with a grain drill at approximately 45 kg/ha. H. schachtii egg populations in soil were determined at the trap crop planting date, and the following spring prior to planting sugar beets over the previous year's trap crop plots. Egg populations at April 1991 plantings of 'Nemex' oil radish, 'Beryl' dry bean, and dry bean + Telone II soil fumigation were 13.9, 9.3, and 5.9/cm³, respectively, followed by 2.8, 5.5, and 3.9 at the April 1992 sugar beet plantings. Nematode severity on 'Seedex SX-1' sugar beet was 4.2, 13.0, and 4.1 adult females/6 roots on June 18 for the respective treatments. March 1992 egg populations were significantly smaller (P = 0.05) following 1991 'Nemex' and 'Pegletta' oil radish than fallow and rye but did not differ from 'Maxi' yellow mustard or 1,3-D soil fumigation. September trap crop plantings were followed by greater infection severity on sugar beet than April or July plantings. Incidental Nacobbus aberrans field infestation levels did not differ among trap crops or planting dates.

floration-centrifugation feedingue. Results (Table 1) showed that regletts and rrego reduced the SCN erg population by 78 and 18% from the initial population. In the following spring (1992) field was planted to superbeat and Tearis was applied at planting on part of the oil radish and buckwhent plots. Koot yield was measured and results showed (Table 2) no significant yield differences between oil radish, buckwheat or Vapara (standard nematicide treatment). Also, there was no significant difference between the use of Temik and non-use of Temik on cillior trop.

In a different study, two nemalode resistant oil radish varvaties (Pegletta and Nemex) and yellow mustard var. (Maxij were planted in the spring of 1991 in sugarocet fields heavily infested with SCN at Parma. Each variety was replicated five times in complete randomized strip design.) Results (Table 1) indicated that Pegletta, Nemex and Maxi significantly reduced the number of SCN eggs by 67, 23 and 87% of the initial population respectively. The coatrol treatment, fallow, reduced egg population by 28% of the initial population.

Results of both studies indicated that resistant catch crops should be used as a partof integrated systems. Also, dutarent varienes of catch crops has different levels of resistance (none of them are absolute)

Important conditions to increase the effectiveness of nematode-resistant catch crops on reducing S.B.C.N. nematode populations:

- Dense planting and deep root penetration.
- Create optimum conditions for egg tratching (temperature and moisture).
 - High resistant levels in the varieties

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