ERIC D. KERR[1*], ROBERT G. WILSON[1], AND PAUL PROVANCE[2], [1]University of Nebraska Panhandle Research & Extension Center, 4502 Avenue I, Scottsbluff, NE 69361, and [2]Foreign 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/cm$^3$, 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.