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Effect of Hairy Vetch Incorporated as Green Manure on Growth and N Uptake of Sorghum Crop

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Abstract: Hairy vetch (*Vicia villosa* Roth) has the potentials for preventing soil erosion and suppressing weed growth as a winter cover crop. We evaluated the additional N supplied by this crop harvested at different growing stages to the succeeding sorghum in pot experiments. Hairy vetch was grown in 1/5000a Wagner pot, and shoots (S) and roots (R) were mixed separately or together (S+R) into the soil on 30 March, 18 April and 2 May. After incorporation of the plants, seeds of sorghum were sown in the pots. Dry weight and N content of hairy vetch increased throughout the growing period. The value of nitrogenase activity in root nodules peaked on 18 April and then drastically declined. When hairy vetch was harvested on 30 March, N content of sorghum in the S pots was definitely less than that in the R and S+R pots. When hairy vetch harvested on 2 May, however, the N content in the S pots was similar to that in the S+R pots, and it was significantly higher than that in the R pots. Although N input from hairy vetch was higher in the S pots than in the R pots, N uptake by sorghum was not reflected in those values. The belowground parts of hairy vetch may have a considerable effect on N uptake of sorghum when using this plant species as green manures.

Keywords: [Allelopathy](#), [Cover crop](#), [Crop rotation](#), [Nitrogen recycling](#), [Root nodules](#)[\[PDF \(466K\)\]](#) [\[References\]](#)

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