

WILD PROSO MILLET DEMOGRAPHY IN SNAP BEANS FOLLOWING THREE DIFFERENT SWEET CORN HYBRIDS. Adam S. Davis\*, Martin M. Williams II, Ecologists, USDA-ARS Invasive Weed Management Unit, Urbana, IL 61801.

Simulation models indicate that weed management effects on seed production of annual weeds should influence weed interference in subsequent crops. Little experimental work has been done to test this hypothesis. In the current experiment, we quantified the impact of differential seed production by wild proso millet (*Panicum miliaceum* L.) grown in competition with three contrasting sweet corn hybrids ('WHT2801', 'GH2547', 'Spirit') varying in weed suppressive ability on wild proso millet demographic transitions and interference in a following snap bean ('Caprise', *Phaseolus vulgaris* L.) crop. Initial differences in wild proso millet fecundity between experimental units translated into differences in seedbank density, seedling recruitment and snap bean yield in the following growing season. Path analysis indicated that carryover effects of variable wild proso millet seedbank density on snap bean yield were mediated through early-season impacts on snap bean population rather than through density dependent feedbacks to physical or chemical weed control efficacy. These results highlight the importance of weed prevention to integrated weed management strategies. Future research efforts should include the development of new tactics for preventing or reducing inputs to the soil seedbank and reducing soil seedbank density.