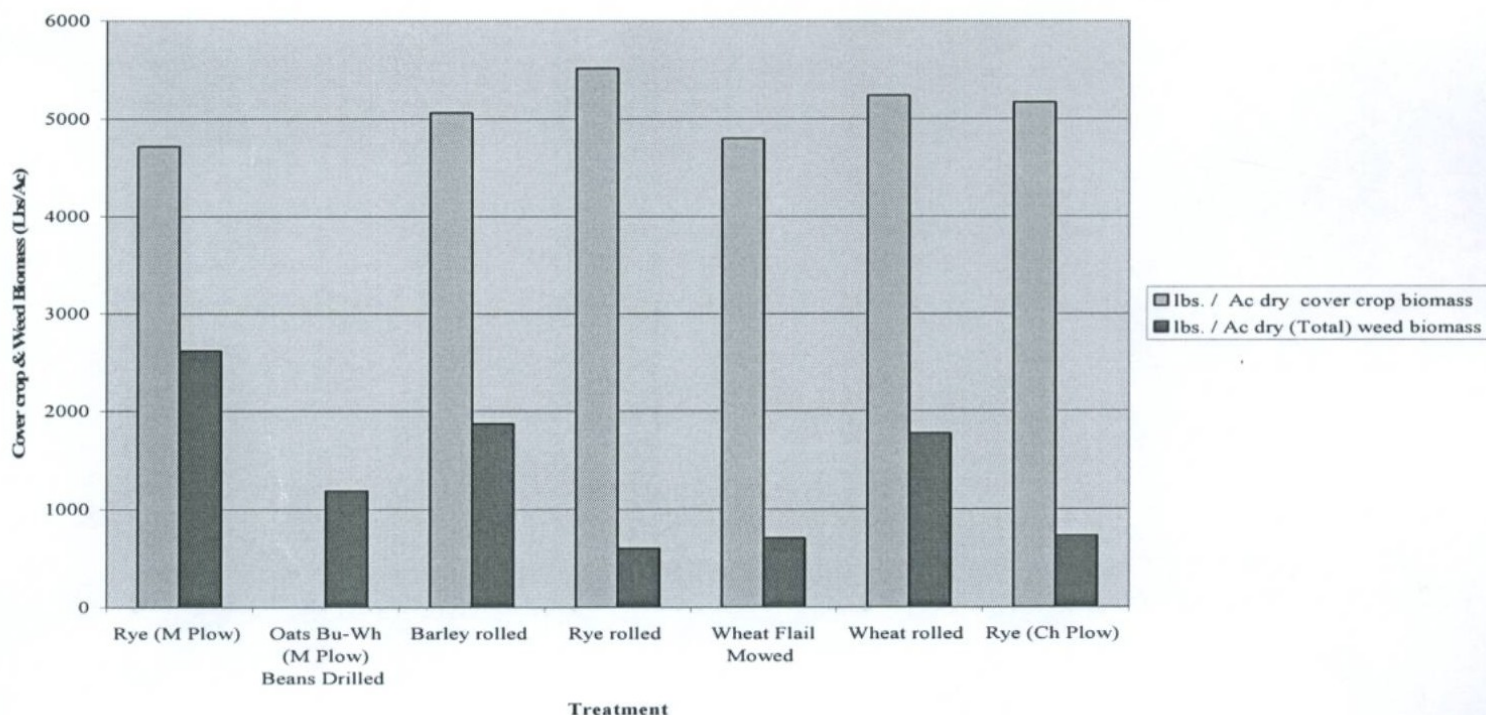


Weed Suppression evaluation: 8/28/03 Weed biomass samples were taken in the soybean strips and evaluated to compare the total weed biomass in lbs/ac between the varying treatments.

2003 Soybean cover crop trial, Cover crop biomass & Weed biomass, weed Biomass taken 8/28/03



The moldboard plow treatments (1 & 2) entailed plowing, disking, cultipacking, planting, and then rotary hoeing, and two passes of cultivation (total 7 field operations). The Chisel plow treatment entailed Chisel plowing, disking twice, cultipacking, planting, rotary hoeing, and two passes of cultivation. (Total 8 field operations). The no-tilled rolled treatments (3, 4, and 7) with the small grains (Barley, Rye and Wheat) had more weed suppression than the conventional tillage moldboard plow treatment. Among these three rolled treatments, the rolled rye produced the least amount of weed biomass, then the wheat and finally barley. As the biomass of the cover crop increased, weed suppression increased with lower weed biomass amounts. These no-till treatments entailed Rolling/Crimping-planting, and 1 field cultivation after the weeds were breaking through the weed suppressive mat (total only 2 field operations) this saved both time and energy resulting in better weed control compared to the conventional moldboard treatment. Treatment #2 that was conventionally tilled then drilled (4 field operations) had a lower amount of weed biomass compared to both the rolled wheat and rolled barley, but not compared to the rolled rye. The Chisel plowed ground had a low weed biomass but this entailed 8 operations. Treatment 6, the flail mowed wheat, had a low amount of weed biomass, this entailed 3 operations (planting, mowing and 1 cultivation) but the mowing operation took more time being a slower operation.

Conclusion: The roller/crimper is an effective implement in managing a no-till organic soybean system. It effectively rolled and crimped the small grain cover crops and prepared a mat of plant material for a weed suppressive soil cover. It effectively reduced the number of field operations to obtain weed biomass amounts that were lower compared to the moldboard plowed conventionally tilled operation. Soybean yield data will be taken and compared for all the treatments.