

INTERCROPPING CORN AND SOYBEANS

Mary I. Poos & Stephen J. Herbert
 Departments of Veterinary & Animal Sciences
 and Plant & Soil Science
 University of Massachusetts

The intercropping of corn and soybeans for harvesting as silage can be advantageous in dairy cow feeding programs. The use of corn silage as the only forage requires a high level of protein supplementation as well as calcium and other mineral supplements. The advantages of using silage with a legume component rather than grass silage are well documented, including the higher protein content of legumes and the more digestible fiber content.

By intercropping soybeans with corn, a silage can be harvested that is higher in crude protein (CP content, 10-11% CP vs. 8% CP for corn silage and higher in calcium, 0.7-0.8% vs. 0.2% for corn silage. The phosphorus level of corn-soy silage is slightly higher than corn silage, but the higher calcium level gives a ratio of 2:1 Ca:P which is desirable for lactating cows. The planting of soybeans with corn for silage will improve the protein and mineral content without appreciably reducing the energy content (68% TDN vs. 70% TDN). The use of corn-soybean silage would require less supplementation to meet the requirements of both dry and lactating dairy cows and so would be an economic advantage in the feeding program.

The 1980 corn-soybean intercropping experiment has been established with several different planting combinations of corn and soybeans. These treatments are:

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| 1. | C | C | C | C | C | C | C | C | C | Corn (Cornell 281) 36" row width | | |
| 2. | S | S | S | S | S | S | S | S | S | Soybean (Harsoy) 12" row width | | |
| 3. | C | C | C | C | C | C | C | C | C | Corn-Soybean in same rows | | |
| 4. | C | S | S | S | C | S | S | S | C | S | S | Corn-Soybeans (3 rows) |
| 5. | C | S | C | S | C | S | C | S | C | S | C | Corn-Soybeans 18" row width |
| 6. | C | C | S | S | S | C | C | C | S | S | Corn-Corn-Soybean (3 rows) | |
| 7. | C | C | S | S | S | S | S | S | C | C | Corn-Corn-Soybean (3 rows)-Soybean (3 rows) | |

Ideally in the intercropping situation corn and soybeans need to reach their optimum maturity stages for silage at the same time. Thus in addition to the main experiment we have three other soybean varieties varying in maturity and two cowpea varieties. This study was sown May 23, 1980. The plots were fertilized with 120 lb N-P₂O₅-K₂O per acre prior to planting. In the previous fall liquid dairy manure had also been applied. The herbicides used were alachor (Lasso) 1 qt and linuron (Lorox) 1 lb per acre.