

# DRILLING VS BROADCAST PLANTING OF COVER CROPS INTERSEEDED INTO CORN GROWN FOR SILAGE

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## Statement of the Problem

Interseeding cover crop into corn grown for silage is a viable practice as shown in demonstration research conducted by University of Idaho Extension Educators and on farm adoption. Broadcasting cover crop seed, either by a spreader or plane, is the most common interseeding method used commercially as very few producers have a dedicated interseeding drill. It is difficult to get good seed-to-soil contact when broadcasting, and seed size is limited by this method.

A question was posed during a field day about the viability of drilling cover crop seed into established corn using a double-disk opener box drill. A three-year demonstration study was conducted at the University of Idaho Kimberly Research & Extension Center farm in Kimberly, Idaho to test the viability of interseeding cover crop into established corn with a box drill.

Picture 1. Drilled cover crop in 30 in. corn (L), broadcast cover crop in 30 in. corn (R).



All pictures taken by Steven Hines.

Picture 2. Drilled cover crop in 60 in. corn (L), broadcast cover crop in 60 in. corn (R).



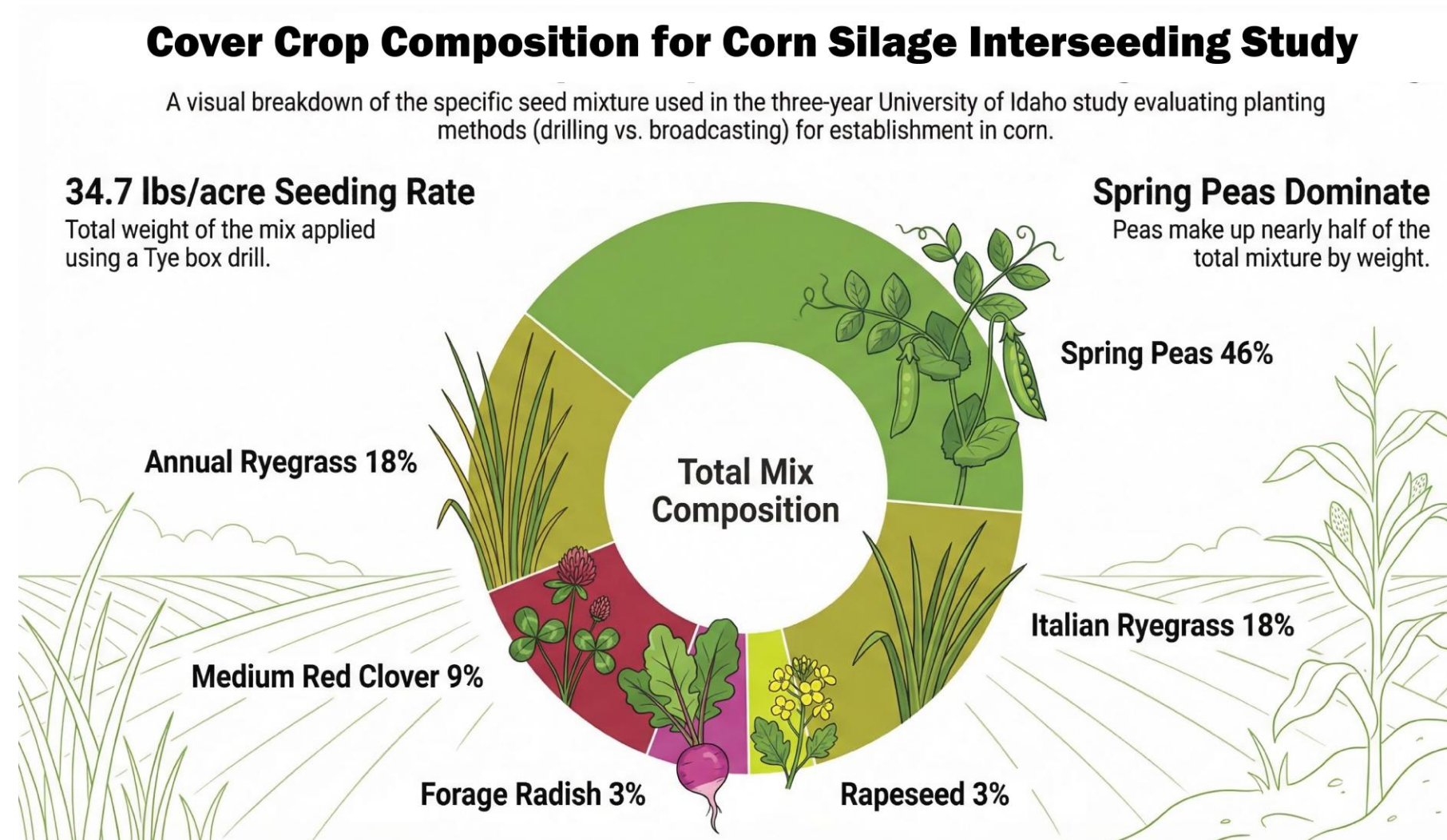
## Methods

Treatments included:

- Corn on 30" centers with drilled cover crop
- Corn on 30" centers with broadcast cover crop
- Corn on 60" centers with drilled cover crop
- Corn on 60" centers with broadcast cover crop
- Corn on 30" centers with no cover crop as a check

The study was a randomized complete block design with three replications of each treatment. In 2023, corn was planted May 23<sup>rd</sup> and cover crop was planted June 15<sup>th</sup>. In 2024, corn was planted May 16<sup>th</sup> and cover crop was planted June 13<sup>th</sup>. In 2025, corn was planted May 9<sup>th</sup> and cover crop was planted June 16<sup>th</sup>. The corn was planted at 36,000 seeds per acre and the cover crop was planted at 34.7 pounds per acre. Pictures 1 and 2 show corn and cover crop growing mid-season.

Figure 1. Cover crop mix used in the study.



Graphics by Jason Thomas using Google Notebook LM.

The corn was harvested when whole plant moisture reached approximately 70% based on kernel milk line. A front mounted Kemper two-row harvester was paired with a rear mounted Haldrup maize sampler to harvest and gather samples, Picture 4. Samples were sent to a commercial lab to obtain actual whole plant moisture.

Picture 3. Double disk opener unit on a Tye drill.



Picture 4. Kemper forage harvester and Haldrup maize sampler.



## Results

Table 1. Corn silage yield results comparing drilled vs broadcast planting of interseeded cover crop.

Treatment	2023	2024	2025	3-yr average
	-----Yield (t/A)-----			
30" Check	31.80 a	30.17 a	30.14 a	30.70 a
30" broadcast	32.41 a	30.72 a	31.03 a	31.38 a
30" drilled	30.95 a	29.32 ab	29.56 a	29.95 a
60" broadcast	26.38 b	26.97 bc	29.31 a	27.26 b
60" drilled	26.80 b	26.16 c	28.44 a	27.42 b
P-value	0.008	0.01	0.11	<0.001
LSD	2.2	2.3	2.3	1.6

The corn silage yield data for each treatment is shown in Table 1. All yield data was moisture corrected to 70%. The data indicates there was no significant difference in yield results between treatments within the same row widths (30 in. or 60 in.) for all years as well as the 3-year average. There was some differences between row widths, but that comparison was not part of the study question.

## Discussion

The data indicates that the box drill double-disk openers did not damage enough corn plants to significantly affect yield even though there was in fact some damage across the drilled plots. Visual observations of the plots showed the drilled cover crop established better than the broadcast cover crop.

Figure 2. Challenges identified by the Extension team.

### Scaling Up: The engineering and logistical hurdles.

<b>Adapting Box Drills</b> Standard wheel spacing often crushes rows; drills must be modified to keep tires out of the corn.	<b>Pre-Plant Weed Control</b> Highly restricted chemical choices that won't carry over and kill the interseeded legumes/brassicas.
<b>Air Drill Limitations</b> Inability to utilize large, wide air drills restricts the acreage a farm can cover during the tight 3-week planting window.	<b>Final Pass Sequencing</b> Timing the final weed control application perfectly before the drill enters the field.

Producers must solve the equipment width and tire-track bottlenecks to make interseeding at scale a reality.