



Biological Crop Residue Degradation

Grass crops like corn, wheat and ryegrass have a very wide carbon to nitrogen ratio (C/N ratio) They need ample supplemental nitrogen to continue to feed the natural process of breakdown for the microbes eating the fodder.

Roadblocks to Degradation:

- Weather conditions and harvest/planting windows that do not favor post-harvest or early spring degradation
- Minimum till or no-till systems will tend to preserve residue rather than encourage degradation
- Crop genetics - GMO crops tend to have more trouble degrading naturally
- Higher planting populations and yields can cause residue buildup



Microorganism Effects

Corn Residue Nutrients per acre (ranges from several University tests for 150-160 bu. / acre corn)

Nutrient	LB. per acre	Potential Value Estimate
N	45-60	\$18-\$24
P205	15-25	\$8-\$14
K20	90-150	\$30-\$50

Wheat Residue Nutrients per acre (62 bu/acre wheat):

Nutrient	LB. per acre	Potential Value Estimate
N	20	\$8
P205	6	\$2.5
K20	64	\$21

*Assumes muriate of potash cost - \$400/ton, DAP cost - \$550/ton, N cost - \$0.40 per unit of N

Potash is particularly important because it is not incorporated into the cellular structure, so it can be easily released by SG Accelerate once water can penetrate into the residue and wash it out.

Q: How much potash do you need to release to pay for the SG Accelerate?

A: Approximately 1/4 of potash in the corn residue released into the soil system will pay for the SG Accelerate app!

A: Approximately 1/2 of potash in the wheat stubble released will pay for the SG Accelerate app!

Other benefits besides the nutrient value in the residue:

- Added soil penetrant
- Faster cycling of organic matter / increased organic matter
- Increased soil nutrient holding capacity due to increased organic matter
- Reduced tire wear from stalk damage
- Less cultivation required for planting preparation (\$10-12 tillage pass not needed)
- Decreased volunteer pressure (seed coating is compromised and decomposed)

Other nutrients per acre in 150 bu. corn residue

Nutrient	LB. per acre
Calcium	29 lb.
Magnesium	21 lb.
Sulfur	7 lb.
Zinc	0.15 lb.
Boron	0.1 lb.
Manganese	0.33 lb.
Iron	1.1 lb.
Copper	0.09 lb.



Application Rate: 32 oz / Acre