

# BioArsenal BioMass™ - Soil Primer & Crop Residue Manager

## “Turn Stubble Into Soil Power”

### Why This Matters

Every ton of grain leaves nearly a ton of stalks, cobs, leaves, and husks behind. That stover is packed with nutrients but often wasted or burned. Our microbial solution recycles it into fertility, organic matter, and long-lasting soil health. Perfect for after Fall harvest or Early Spring applications.

### How It Works

- **Breaks Down Tough Residue**

Microbial enzymes digest cellulose, hemicellulose, and lignin → converting hard stalks into sugars and humic substances in a shorter time frame.

- **Unlocks Nutrients From Stubble**

Instead of losing fertility, microbes recycle it for the next crop.

Nutrient Value of 5 Tons Corn Residue per Acre:

Nutrient	Pounds per Acre	Fertilizer Equivalent
Nitrogen (N)	~75 lbs	~160 lbs Urea
Phosphate (P <sub>2</sub> O <sub>5</sub> )	~24 lbs	~52 lbs DAP
Potash (K <sub>2</sub> O)	~90 lbs	~150 lbs MOP

The follow Corn table represents per acre value based on a 200 bushel yield per acre, resulting in 5 tons of corn residue. Using a conservative product regeneration equivalent minimum of 70% Urea, DAP, and MOP. Quickly, 30 – 45 days for regeneration vs. leaving residue untreated. (Most Nutrient Value left in the field is released into the atmosphere, 30% maximum retained over longer period)

Corn	5 Tons Treated	5 Tons Untreated
Nitrogen	\$44.80	\$19.20
P <sub>2</sub> O <sub>5</sub>	\$16.38	\$7.02
K <sub>2</sub> O	\$46.98	\$20.02
Sulfur	\$5	\$1.50
<b>Total Value</b>	<b>\$113.16</b>	<b>\$47.74</b>
Product Cost + \$7 Application	\$25	\$0
<b>Net Return</b>	<b>\$88.16</b>	<b>\$47.74</b>

The following Bean table represents per acre value based on a 60 bushel yield, resulting in 2 tons of residue remaining. Soybean residue has a higher value of Nitrogen per ton than corn due to more nitrogen and phosphorus with less residue tonnage.

Beans	2 Tons Treated	2 Tons Untreated
Nitrogen	\$54.00	\$21.06
P <sub>2</sub> O <sub>5</sub>	\$14.00	\$5.46
K <sub>2</sub> O	\$24.00	\$9.36
Sulfur	\$0.40	\$0.16
<b>Total Value</b>	<b>\$92.40</b>	<b>\$36.04</b>
Product Cost + \$7 Application	\$25	\$0.0
<b>Net Return</b>	<b>\$67.40</b>	<b>\$36.04</b>

- **Builds Soil Carbon & Structure**

Fungal hyphae + glomalin proteins act as natural “glues,” improving porosity, rooting, and water storage. Every 1% organic matter increase = 20,000–25,000 gallons more water per acre.

- **Boosts Soil Biology**

Nitrogen fixers, P & K solubilizers, and biocontrol microbes all work together to cut disease risk, feed crops, and stimulate soil life.

### The 13 Count Microbial Team and What they Do

- **Degraders:** Cellulase enzyme producing Bacteria, White-rot Fungus, BioControl Fungus
- **Fertility Builders:** Plant Growth Promoting Bacteria (PGPR's)
- **Biocontrol Protectors:** BioControl Bacteria, Antibiotic producing Streptomyces, Photosynthesizing Bacterium
- **Soil Health & Fermentation:** Eukaryotes, Fermenting Bacterium

### Key Farmer Benefits

- ✓ Faster stubble breakdown — no waiting, no burning
- ✓ Recycles stubble nutrients — saves on fertilizer costs
- ✓ Improves soil tilth, rooting, and water-holding
- ✓ Builds long-term organic carbon for resilience
- ✓ Suppresses soil pathogens naturally
- ✓ 100% natural — no chemical NPK (dextrose carrier only)

### More Residue = More Resources

Instead of losing nutrients into the air, keep them in your soil where they grow next season's yield.

**Turn yesterday's stalks into tomorrow's harvest.**