



FROM RESIDUE TO RETURNS WITH BIOCHOP!

AGRONOMY RX

PHYSAGRO PRODUCTS ARE DESIGNED TO ADDRESS THE TOXINS AND LIMITING FACTORS WITHIN OUR SOILS TO PROVIDE PLANTS WITH ABSORBABLE NUTRIENTS AND IMPROVED GROWING CONDITIONS.

APPLICATION BENEFITS



FREQUENTLY ASKED QUESTIONS

FAST FACT:
EACH ACRE OF CORN RESIDUE AFTER A 150 BU/ACRE CROP CONTAINS ROUGHLY 55 LBS OF NITROGEN AND 16 LBS OF PHOSPHOROUS. [1]

WHY BIOCHOP?

BioChop is a uniquely designed blend of natural enzymes and microbes targeted specifically to promote crop residue digestion. BioChop uses a combination of natural additives and live strains that penetrate into plant tissues and begin converting it to soil organic matter. BioChop is also manufactured using Pursanova activated water technology which allows the product to maintain an optimized frequency for microbial processes without the need for synthetic additives.



DOES BIOCHOP NEGATIVELY IMPACT NITROGEN?

No. After Biochop is initially applied, there is a short term delay in the availability of the Nitrogen as the microbes begin to work (roughly a week). Once residue begins to degrade the Nitrogen is released along with other nutrients previously tied up.



WILL ALL OF MY RESIDUE IMMEDIATELY DISAPPEAR?

No. Using Biochop accelerates the process of residue digestion, and will make plant material left on the surface more fragile and weak. Total removal varies with time, weather, and tillage practices.



CAN USING BIOCHOP HELP BUILD ORGANIC MATTER?

Yes. Biochop breaks down components of leaves and stalks into nutrient rich organic matter.

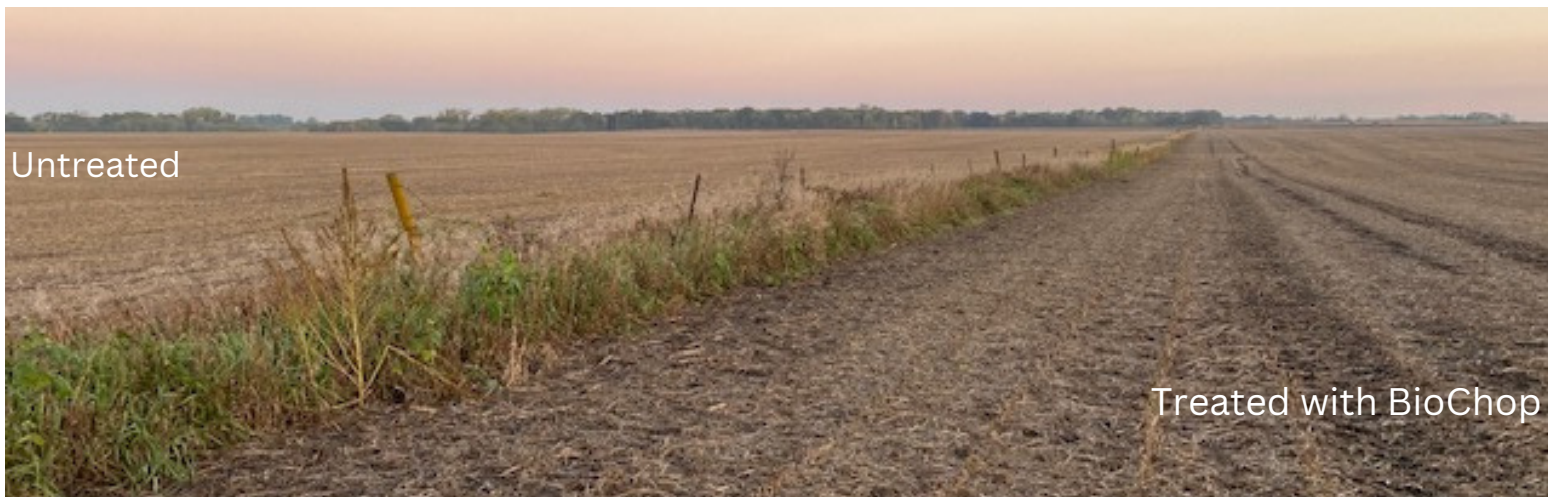


WHAT SHOULD I DO TO MAXIMIZE RESIDUE BREAKDOWN?

Biochop works best when applied in warm (above 50 degrees F) conditions and fodder is lightly incorporated 7-10 days after application. Breakdown is also enhanced when paired with a microbial food source to prolong activity and growth.

RESIDUE MANAGEMENT

AT A GLANCE



RESIDUE DIGESTION AND BUILDING SOIL ORGANIC MATTER

Organic matter in the soil is made primarily from decaying plant fodder and animal remains. Soil microbes facilitate the construction of organic matter by digesting these materials into nutrient rich organic compounds. As biological activity continues, these components release nutrients to plants and form humus. Roughly half the composition of organic matter is carbon [1]. In addition to mineral release, building SOM promotes carbon sequestration.

A LOOK AT THE CARBON TO NITROGEN RATIO (C:N)

During residue digestion, one factor to consider is the increase in total carbon units being introduced into the soil surface. This influx of new material causes a response by the microbes in the soil to scavenge energy and nitrogen in order to process and digest the new material. This leads to a change in the carbon to nitrogen ratio (C:N) in the soil and a short term immobilization of some nitrogen until digestion begins. Soil microbes utilize roughly 16 parts of carbon for regular energy, and produce carbon dioxide gas as residue digestion occurs. Corn residue typically has a C:N ratio of about 55:1. Microbes will require additional energy to speed residue breakdown until the ratio gets closer to 25:1. Tillage practices and fertility also impact the C:N ratio [2].

WHAT IS WATER EXTRACTABLE ORGANIC CARBON (WEOC)?

Water extractable organic carbon (WEOC) is a measure used in lab settings to determine the amount of carbon that is aqueous from a soil organic matter profile. It represents the most available and soluble carbon from the profile. It can also be used as a rough indicator of microbiological activity in that zone, particularly with residue breakdown.

BENEFITS OF APPLICATION:

1. CONVERTS CROP RESIDUES INTO ORGANIC MATTER AND HUMUS.
2. IMPROVES SOIL TILTH.
3. REDUCES DISEASE PRESSURE BY REDUCING CROP WASTE.
4. PROMOTES CARBON CYCLING BY CONVERTING RESIDUE TO AVAILABLE NUTRIENTS AND CARBON DIOXIDE.
5. IMPROVES WATER HOLDING CAPACITY.
6. BUILDS THE NATURAL SOIL BIOME AND PROMOTES BIODIVERSITY.
7. REDUCED POTENTIAL FOR EROSION.
8. REDUCES FUEL CONSUMPTION DURING TILLAGE.
9. CREATES PROLONGED NUTRIENT RELEASE.
10. IMPROVED ROOTING CONDITIONS.

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[1] DeJong-Hughes, J. (n.d.). Crop residue management. Extension at the University of Minnesota. <https://extension.umn.edu/corn-harvest/crop-residue-management#how-it-relates-to-soil-productivity-1211761>
[2] Carbon nitrogen ratio - advance cover crops. Advance Cover Crops - Cover Crop Rollers & Seeds. (2019, August 27). <https://advancecovercrops.com/resources-advanced-cover-crops/carbon-nitrogen-ratio>