



## Welcome to Ground Work

### Residue™ for Pastures

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**Residue™** is not just for rapid degradation of crop residues, though it certainly excels in that role. It's an **equally useful product for livestock operations**. Though meat or milk may be the cash crop for a particular operation, one cannot forget that animals, like people, are what they eat. And what they eat, especially perennial forages, can be improved by targeted use of fungal and bacterial cultures.

**New pastures** that are being established on recently cleared land are one example. The dirt work, and timber and brush clearing that accompany this process are very hard on the soil. Adding organisms and an appropriate support package prior to seeding such fields enhances the seedlings' establishment. And seedlings that start vigorously tend to stay vigorous. Likewise this same procedure is equally beneficial when establishing perennials on row crop ground. Especially on formerly chemical intensive ground. Many growers have failed the first year or two to get perennial grasses established on ground with an herbicide history. Boosting biology will help.

**Grazing** is another example. Many have seen the benefit of grazing high and leaving significant plant material behind but content themselves that this

alone will do all that is desirable for their soil. It certainly can be that grazing alone on low value land is the most economic course, but that does not mean that grazing alone is all that is needed on ground that is worth more. What is desirable, even needed, is to increase the forage productivity of good land to the point where grazing is at least as profitable as an alternative land use – like growing corn. Today's high output, high value pasture means getting the grazing, fertility and microbial diversity right.

An explanation as to why that is so is because two thirds of most perennial forages is below ground. And most of the plant carbon that becomes stable soil carbon comes from the roots. Furthermore, grasses, except when winterizing, do not store carbohydrates. When (on many species) too much of the plant is removed those plants are obliged to slough roots and start all over as small plants with small roots. They lose momentum. Thus the reason to graze high is not to have a lot of straw to stomp in, it is to avoid removing too much of the photosynthetic capacity needed for regrowth. Perennial grasses that are grazed appropriately – and what is appropriate varies greatly by specie and region – don't slough as many roots and don't get into an internal carbon deficit situation (short in photosynthetic ability due to lack of leaf surface area). Yet sooner (like when haying) or later, roots die off and their components, particularly lignins and suberins, get processed into stable soil carbon by fungi.

Yet many folks who value soil biology don't accept the need for microbial inputs but instead cling to various myths about the soil. Perhaps that is because there are so many things about soil microbiology that are not commonly known. For instance, the soil is not like the rumen of a cow. A rumen is a fermentative vat where the activities are conducted by anaerobic or facultative organisms. Yes, good soils have anaerobic microsites, but **healthy soils are primarily aerobic**. So it is not at all a given that animal manures contain all the desirable organisms a healthy soil can use.

**If you have a new seeding to plant, or if your land has higher productive potential, you can better manage your microbiology with Residue™ and Myco Seed Treat™.** AgriEnergy Resources can help you get the highest economic levels of meat or milk production possible.