

# Increasing Root Mass for Better Nutrient Uptake

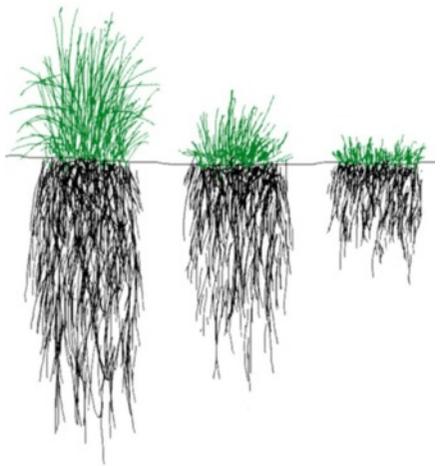
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AG-USA

Why is root mass important to the farmer? The size of plant roots is a key factor in determining the uptake of nutrients by the plant, plant growth and the ability of the plant to survive dry spells. Do you want more roots?

## Only Take the Top of the Plant

Whether grazing or cutting for hay, it is helpful not to take more than half of the height of the plant, and even better to only take the top third.

According to research (Crider, 1955), removing too much of the plant causes plant roots to stop growing. When you take half or less than half of the plant, none of the roots stop growing. When you take 70% of the plant, 50% of the plant's roots will not grow for 17 days. When you take 90% of the plant, it will totally shut down root development for 17 days (see picture).



Recently a farmer told me that he generally rotates his cows between 2 fields. But when he stopped that rotation, he was surprised to see just how much less grass his fields produced.

It's true. Although it may be labor intensive, rotational grazing can greatly increase root structure, resulting in greater production. This is especially true when livestock aren't left on a field long enough to eat more than 50% of the plant.

Rotational grazing is also a tool to help reduce intestinal worms. Worms enter the soil through cattle manure and lay eggs. These eggs grow to worms, but if there is no animal present to host them, they soon die. The cycle of the worm is broken.

The more often that livestock are moved, the greater the benefits. For those who have the time and energy to do so, mob grazing takes root and plant development to a whole new level.

- Dr. Christine Jones has found that the trampling of plants that occurs during mob grazing really helps to stimulate plant growth.
- She also found that it has a profound effect on retaining soil moisture.
- With mob grazing, cow pies are trampled, which helps to reduce the amount of flies.

## MycorrPlus Produces Larger Roots

Bill in Ohio said: "We had quite a few large size potatoes; quite a few were larger than my hand, 7 to 8 inches long and 1 to 1.25 lbs."

Roger in Wisconsin loves to show off his 5 lb. rutabaga. That's huge! Good job, Roger.

Darrell in Georgia said: "We found lots of earthworms, low compaction and deep roots."

Ryan in Georgia said: "We had deeper root systems on our Cosque

Black Oats. They averaged 50 grams per plant compared to 14 grams in the control." (See picture below)



Diane in Mississippi said, "Our plants have a better root system now."

Jim in New York said: "My sweet potatoes were large and well formed, a bumper crop!"

Phil in Ohio said that the root system on his corn was appreciably better on treated soil. Brace roots were more uniform and larger in size compared to untreated (see below).



Warren in Kentucky said, "I do think the root system is better; there are plenty of tiny roots reaching to the surface of the ground."

Kristin in Georgia said: "Root structure is much better with thicker clumps."

David in Iowa had an amazing carrot

harvest, including a 2-foot carrot! He said they came out of the ground easily, and the soil didn't stick.

Levi in Indiana noticed big roots in his tomatoes and better yields than most years.

## Extending Roots With Fungi

You don't usually find mycorrhizal fungi in farm ground, but when they flourish they greatly enhance the efficiency of plant roots, including the ability to take up nutrients and water.

Farmers are finding that one of the benefits of MycorrPlus is that it helps to create conditions in the soil where mycorrhizal fungi flourish.

- Bill in Ohio said that he now sees fungi on the organic matter and in the soil.
- Ryan in Georgia has mycorrhizal fungi mushrooms everywhere.
- John in Iowa said: "In the past, I have struggled trying to get fungi to develop in my soil. But the areas treated with MycorrPlus show signs of fungal strands and also the litter layer has a lot of fungal growth on it."
- Warren in Kentucky said he is seeing some fungi now.
- Ben in Wisconsin said they had a lot of white fungi on their bunched beets.
- Daniel in Iowa said: "I saw mycorrhizae in the root zone and had my best soybeans ever."
- Andrew in Michigan said: "I was blown away by the mycorrhizal fungi all over the roots of our plants."

MycorrPlus not only helps a plant to develop a huge root system, but it also helps to establish mycorrhizal fungi, which far extend the reach of the roots.

Imagine huge root structures in your fields!

What could larger roots do for your farm?

Learn more. Call our toll-free number today and request a free information packet.

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