



EARTHGEN215, LLC

June – July 2023 News Letter

Celebrate the Wonders of Grasses' Nutrition and their Vast Varieties & Versatility



Orchard grass for hay, growing in Ridgeway, Colorado

Orchard grass, corn, small grains, and sugar cane are among the many plants included in the grass family (Poaceae family). Not only are these grass family members essential sources of nutrition for humans and animals, the functions of their root structures provide vital benefits to soil. Each crop shown in this Newsletter is growing or grew in soil treated as recommended, with EarthGen215's products.

Various types of grasses and their hay, feed grazing and feeder as animals well as cherished performance animals and pets.



Non-GMO Corn primarily for animal consumption, Plymouth, IA



Corn is used in a wide variety of finished human edibles. Corn kernels are prepared in countless ways, ground corn is included in many baked and fried goods, and corn syrup is in a vast number of human foodstuffs. Corn oil is used in a multitude of ways, as well. Corn is often included in finishing mixes for feeder cattle, and in maintenance mixes for many vegetarian animals (i.e., goats, sheep, cows and horses). It is also fed to hogs and a number of zoo-animals. Corn is also processed to obtain ethanol for fueling gas-engine vehicles.



Strong winds along Greybull River, Cody, WY area – no lodging

Grains of all varieties supply carbohydrates, protein, oils, and vitamins for humans. Small grains are wheat, oats, rye and barley, and they are readily seen in the US.

Some estimate that as much as 70% of the world's agriculture land produces grass family crops, and more than 50% of the world's calories are supplied by small grains in the form of cereals (Encyclopedia Britannica, 16 June 2023).

Grasses produce masses of complex, tangled roots. This type of root structure anchors its crop above the soil very well. Roots absorb nutrients and moisture from the soil, and store those nutrients and moisture until they are needed by their plant. Complex roots also protect the soil against wind and water erosion. In perennial grasses, there are two root systems. The first is the primary roots that grow from the embryo during the seed's germination. These are seed-roots.



Winter Rye, human consumption & seed production, in northern IA

The second root system in grasses are adventitious roots. The seed-roots usually die after the first season following when the seeds are planted. The adventitious roots grow in lateral shoots off of the primary seed-root and from nodes of each plant's crown.

The complex root structure of grass family members develops tremendous numbers of root hairs. Only root hairs can take up moisture, essential minerals, and other nutrients from soil for their respective plant to assimilate, thrive, and produce.

Soil treated with EarthGen215 products, as recommended, naturally contains more oxygen than soil not so treated. Seriously compacted or waterlogged soil usually lacks oxygen and often restricts roots' ability to transport nutrients into the plant. Oxygen deficient soil limits crop production and usually causes more weed pressures. After applying EarthGen215 products as recommended for a few consecutive growing seasons, oxygen levels in soil generally improve, and there are corresponding crop production improvements. The quantity of irrigation water needed to produce intended crops may, depending on weather events, decline as soil structure improves. EarthGen215 encourages producers to check the soil in their fields for moisture content when deciding how much irrigation water to apply.

We here at EarthGen215 are here to assist you and look forward to increasing your yields while reducing your costs.

To your health and the health of your soil!!

Thank you,

Tom

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