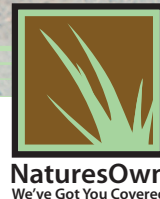


Acres of
Success
and Savings!



Balanced Carbon to Nitrogen diet for vegetation

NaturesOwn® X9000

Introduction

Nitrogen is the most essential nutrient plants require to germinate and sustain growth and can be supplied bacteria, decaying organic matter such as compost, and inorganic fertilizer. The Carbon to Nitrogen ratio (C:N) is the ratio of the mass of carbon to the mass of nitrogen found in living or dead organisms and plays an important role in plant nutrient availability.

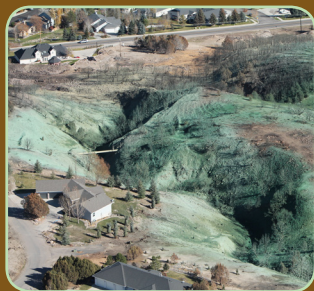
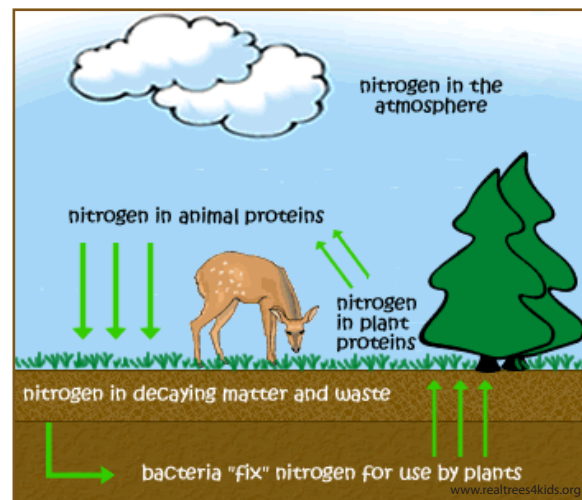
Carbon changes everything

Microorganisms naturally have a C:N ratio near 8:1. To maintain life and continue to grow and thrive, microorganisms need a diet with a C:N ratio of 24:1, 16 parts of the carbon is used for energy and 8 parts is used for maintenance.

When organic materials with carbon content such as leaves, grass clippings, wood chips, straw, and newsprint are added to the soil, they change the nutrient levels, tipping the C:N scale and altering the soil structure.

For instance, when wood chips are added to soil, its C:N of 400:1 contains a much greater proportion of carbon to nitrogen than the optimal 30:1 balanced diet that soil microorganisms require. When this occurs, the microbes search for additional nitrogen to be paired with the carbon in order to consume the wood chips. Available Nitrogen becomes tied up or immobilized, creating a deficit of nitrogen in the soil, and reducing the amount of Nitrogen available for plant growth.

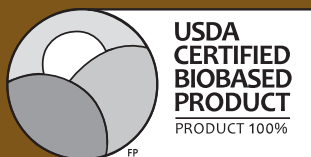
Alternatively, when a low carbon containing material such as grass clippings with a C:N of 20:1 is added, the opposite occurs and microbes consume the grass clippings and leave the excess nitrogen in the soil through a process called mineralization. These nutrients can then be used by plants or lost to the atmosphere or via runoff.



Selby Soil Erosion Control Co.

Did you know?

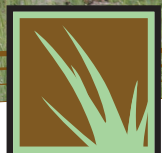
Nitrogen was discovered in 1772 by chemist and physician Daniel Rutherford, when the scientist removed oxygen and carbon dioxide from air, demonstrating that the residual gas would support living organisms or combustion, according to the Los Alamos National Laboratory.



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NaturesOwn

We've Got You Covered! **NaturesOwn® X9000**

The *NaturesOwn* difference

When a product or material such as hydro mulch is applied to achieve erosion control, turf establishment or soil remediation, the nitrogen in the soil is modified either positively or negatively as explained above. *NaturesOwn* X9000 and Evolution have a C:N of 60-66:1. When compared to straw mulches in the 80-100:1 range and wood mulches in the 350-400:1 range, the C:N ratio of *NaturesOwn* premium products is much closer to the optimal 30:1 ratio that microorganisms and plants prefer, thus aiding the growth of prospective vegetation and competing less for plant nitrogen.

The use of mulch with a high C:N ratio requires the addition more Nitrogen fertilizer to support the same level of plant growth as *NaturesOwn* Mulch. This additional Nitrogen adds costs, and can increase the risk of potential damage to the environment via nitrogen run-off into surrounding watersheds, and loss to the atmosphere as a greenhouse gas.

NaturesOwn is the hydro mulch that is as close to nature as you can get!



References

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