

The Basics of Humic Substances

THE BENEFITS OF HUMIC AND FULVIC TECHNOLOGY AND WHY MONTY'S IS THE BEST IN THE INDUSTRY

1. What are humics substances?

Humic substances (Humics) are derived from ancient humified materials (e.g., lignite) and are broken into two main categories, Humic Acids and Fulvic Acids. They are major organic constituents of soil (humus), peat, and coal. They are also found in upland streams, lakes, and ocean water. Humic substances are produced by the decomposition of organic matter over millennia.

2. How can humics and fulvics help to increase my yield?

Humics stimulate microbial activity in soil, help break up compacted soil, assist in transferring micronutrients from the soil to the plant, enhance water retention, increase seed germination, and improve the breakdown of plant residue. Humic acids can protect plant cells from toxins, pathogens, and other environmental impacts. Fulvic acids facilitate nutrient uptake through the plant tissue while also working as a chelator of nutrients, increasing the nutrients' bioavailability.

3. Will I get an ROI? It is widely recognized that by improving the soil and stimulating the plant, increased yields will follow. University and on-the-farm trials have shown significant improvements in the overall health of soil and plants, and therefore you should see a return on your investment.

4. Why do different humic products have different percentages?

Some manufacturers use different methods for determining humic or fulvic content. Monty's is working with the Humic Products Trade Association (HPTA) to bring standardized testing to both state regulators and the agricultural industry. Monty's uses only the HPTA Method (ISO 19822) for determining our products' humic and fulvic acids levels. Other manufacturers may use less reliable methods. Monty's is a proud member of the HPTA which works to promote commercial trade of humic products through scientific cooperation while addressing regulatory issues.

5. How can Monty's lower % Humic products be better than the competition's higher % Humic products? Some competitors may claim higher percentages. But, if they have not started with humified materials, they are not true Humics and whatever percentage they claim does not reflect actual humic or fulvic acids. Monty's uses the HPTA method (ISO 19822), the most accurate and most widely accepted method in use today. When comparing products, be sure to compare products using the same method of analysis.

6. What differentiates Monty's humic substances from the competition? Monty's activated, proprietary humic and fulvic acid products are derived from ancient humified material (e.g., lignite), not processed plant materials or manufacturing by-products which are not included in any recognized definition of humic substances. Competitors using these materials have products which are less pure, less active, and less bioactive – resulting in significantly less impact on your crops. Always look to see what the humic and fulvic acids are derived from in whatever product you are considering.

Whether it's 50%, 25%, or 12.6%, humics in their natural state are insoluble. This means they cannot disperse effectively through the soil profile. Monty's proprietary processing technology makes our product the most active and soluble available. Our humics are purer and have the ideal humic-to-fulvic ratio to provide for maximum yield and success. We understand the right concentration of humic substances to maximize biological stimulation. This is why our lower concentrations are more effective. This is our advantage.

7. What is purity (active ingredients) versus non-purity (inactive ingredients)? Our Humics are purified and contain primarily Humic substances (beneficial material). In other products, clay and ash (non-beneficial materials) may be bound to the humic substances, which can lead to decreased effectiveness and performance issues, including clogging of spray equipment. A more clean, pure humic is our advantage.

8. Can you use too much? Application of Monty's Humic products at rates up to 50 times those recommended, are not toxic or harmful to the environment – including soil, plant, and native soil microorganisms. Monty's recommended application rates allow for maximum, cost-effective results.

9. How can you apply two quarts to an acre and get results?

Our proprietary Humics are purified and activated, have the correct humic-to-fulvic ratio, and are applied at the optimum concentrations. Therefore, we have a lower rate of application and can achieve greater results by stimulating the plant and the soil's natural biology in the most effective way.

10. How does your cost/acre compare to other humic products?

Our cost per acre is generally lower because our Humics are purified and activated, have the correct humic-to-fulvic ratio, and are applied at the optimum humic concentration. Although our cost/gallon may be greater, our cost/acre is generally less because of our lower application rates.

11. Why do some companies recommend using 10 times more dry humics than Monty's? Many dry humics on the market are simply crushed brown coal. In this state, the Humics contained in the product are mostly insoluble and inactive. Therefore, the competition must recommend higher application rates. Monty's Dri-Carbon contains both soluble humic and fulvic acids. More isn't always better.

12. Can Monty's products be blended with dry fertilizer and spread in the field? Yes. Our field studies and university trials involving Dri-Carbon and Humihance have not shown any compatibility issues to date.

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13. Why are some products clean and some have sludge? Monty's is the cleanest humic product available. Because of this, there is less opportunity for sludge to develop compared to other products in the industry. Monty's liquid products are a true humic solution. Most competitive products are a suspended humic. Suspended humics are not as active and often settle out as sludge and clog nozzles.

2. How do you show/know it's active? Activity is measured in the soil and plants. Soil testing will show the results: reduced soil compaction, improved overall soil health, enhanced micronutrient uptake, and enhanced breakdown of plant residue. Tissue testing will show a better balance of nutrients the plant needs. Results may include increased root mass, healthier plants and ultimately a higher yield. As an example, a recent study by North Carolina State University found a 12% average increase in yield over untreated soil.*

15. What are the advantages of using Monty's products throughout the year? Monty's humic products are continuously working when used throughout the year. Monty's recommended programs can improve your plants and soil, and maximize your yields year after year, providing the most cost-effective solution available. Monty's activated humic and fulvic acids work throughout the year remediating your soil, revitalizing your soil, stabilizing nutrients, and stimulating plants.

16. How often do you have to apply Monty's humic and fulvic products? Monty's recommends our humic products be incorporated into your annual nutrient management program for continued benefits. Monty's humic products should be applied at least once each year. More frequent applications, depending upon soil test results, can be up to 3 times throughout the year, and can result in greater performance and higher yield. Monty's fulvic products should be applied throughout the growing season based on tissue testing results. Ask your Monty's representative for more details.

17. Why are you telling me to add carbon, when I have plenty of carbon in my soil? Carbon has many forms, but stable, organic carbon is our priority. Monty's Liquid Carbon and Dri-Carbon are the product name for our active humic products. Monty's Liquid Carbon and Dri-Carbon contain highly purified and activated humic substances with carbon in their molecular structure. This type of carbon is stable and organic.

18. Does Monty's activated humic technology work in all soil types? Yes. Whether you have clay soils and compaction or sandy soils, Monty's humic-based products provide benefits to your soil.

19. Are there compatibility issues when mixing Monty's products with other products? Our field studies and university trials have shown few compatibility issues. Always follow all label instructions, and jar test first when mixing with other chemicals.

20. How long before Monty's Humics start working? Monty's liquid

humic products start working immediately upon application to the soil. Our dry humic products and Humihance begin working as they dissolve when exposed to moisture. Monty's foliar applied fulvic products begin working as soon as they are sprayed on the plant.

21. How do Humics raise/lower pH in my soil? Soils can be either acidic or alkaline due to excessive cations or anions in the soil. Because Humics have both positively and negatively charged locations on them, they are able to bring more balance to the acidic (positive/cations) or alkaline (negative/anions) conditions in the soil.

22. Do humics increase cation exchange capacity (CEC) in the soil? Humic substances by themselves have a very high CEC. When added to soil, humic substances stimulate soil organic matter production, which is rich in humus. Humus has a high CEC, which raises CEC levels on the soil test.

23. How do Monty's Humics increase microbial activity? Humic products increase microbial activity by providing optimum conditions for microbial life and protecting microbes from adverse external conditions.

24. What are the differences/advantages of Dri-Carbon vs. Liquid Carbon? Both Liquid and Dri- effectively promote new soil mineral formation. Because of its manufacturing process, Dri-Carbon contains more soil minerals and micronutrients. Monty's Liquid Carbon is immediately active in the soil. Monty's Dri-Carbon must dissolve to be active. The difference is the application. Both Monty's Liquid Carbon and Dri-Carbon can be mixed with other products to eliminate additional passes in the field. Both offer the benefits of Humics to your soil. The difference is the application method which works best for you. It depends on your farming practices and the equipment you use.

25. Can I buy Monty's products everywhere? Unfortunately, no. Each state has its own label regulations and requirements. Though Humics are popular and widely used, some states have yet to recognize the technology. Talk to your Monty's Sales representative about how to gain access to our products either directly or through your dealer.

For more information, contact your Monty's representative, visit montysplantfood.com, or call 800.978.6342.



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