

# HUMIC ACIDS vs. COMPOST

## COMPARISON

	Humic Acids	Compost
Soil Humus Levels	<ul style="list-style-type: none"> <li>Significant, long-lasting addition of carbon, directly adding to humus levels. Mined humic substances have 60%–70% humic/fulvic acids.</li> </ul>	<ul style="list-style-type: none"> <li>Rapidly decomposes, leaving minerals behind but releasing carbon into atmosphere as CO<sub>2</sub>. Good quality compost has about 5% humic/fulvic acids.</li> </ul>
Nutrients	<ul style="list-style-type: none"> <li>Will help existing nutrients to become mobile within the soil</li> <li>Increases availability of P</li> <li>Stabilizes N</li> <li>Acts as a chelate complexing agent for N &amp; P</li> </ul>	<ul style="list-style-type: none"> <li>Minimal effect on existing soil nutrients</li> <li>May add about 1.5 lb of N, 1 lb P, and 1 lb K per ton of compost</li> <li>Inconsistent nutrient levels (depending on source material)</li> <li>No chelating effects</li> </ul>
Soil Biology	<ul style="list-style-type: none"> <li>Improves microbial diversity</li> <li>Stimulates beneficial microbes</li> <li>Does not contain microbial life</li> </ul>	<ul style="list-style-type: none"> <li>May bring new microorganisms / pests / pathogens / undigested seeds to the soil</li> </ul>
Soil Health	<ul style="list-style-type: none"> <li>Rapidly enhances soil structure</li> <li>Detoxifies soils</li> <li>Buffers soils from effects of heavy metals</li> </ul>	<ul style="list-style-type: none"> <li>Slowly enhances soil structure</li> <li>No detoxification effect</li> <li>No buffering effect (may add heavy metals)</li> </ul>
Consistency	<ul style="list-style-type: none"> <li>Highly consistent and stable carbon source</li> </ul>	<ul style="list-style-type: none"> <li>Not consistent—dependent on source material (may contain varying carbon, nutrients, weed seeds, bacteria levels)</li> </ul>
pH, CEC, Salt Levels	<ul style="list-style-type: none"> <li>Neutralizes pH</li> <li>Increases CEC (average is 800–1,200; 10x to 20x over compost)</li> <li>Buffers salt</li> </ul>	<ul style="list-style-type: none"> <li>May raise or lower pH</li> <li>Minimally increases CEC</li> <li>May add salt</li> </ul>
Biostimulant Activity	<ul style="list-style-type: none"> <li>Concentrated biostimulant effect</li> </ul>	<ul style="list-style-type: none"> <li>Diluted and highly variable biostimulant effect</li> </ul>
Water-Holding Capacity	<ul style="list-style-type: none"> <li>Lasting, high water-holding capacity</li> <li>Holds up to 7x water weight</li> </ul>	<ul style="list-style-type: none"> <li>Water-holding capacity is high, but it diminishes over time</li> </ul>
Health & Safety	<ul style="list-style-type: none"> <li>No health or safety concerns</li> </ul>	<ul style="list-style-type: none"> <li>May contain harmful bacteria, causing plant- or soil-borne diseases. May contain herbicides or pesticides.</li> </ul>
Application	<ul style="list-style-type: none"> <li>Liquid versions can be applied at any time in the crop season</li> </ul>	<ul style="list-style-type: none"> <li>Bulky to transport and apply</li> <li>Can only be applied when no plants are in the field</li> </ul>
Application Cost	<ul style="list-style-type: none"> <li>200 lb/ac @ \$500/ton = \$50/ac (less is required if liquid versions used, may change costs)</li> </ul>	<ul style="list-style-type: none"> <li>5 tons/ac (or more) @ \$60/ton = \$300/ac (or more). Delivery may be an additional per-mile cost.</li> </ul>