Increased soil fertility
Improved water management
Reduced fertilizer usage
Increased yield and quality of crops

High content of humic acids

100% NATURAL
HUMAC® Agro is a 100% natural carbon type soil fertility stimulator with high content of natural humic acids obtained from Leonardite. Humic acids are the basis of biological processes in the soil and their physiological activity assists plant growth and development and improves soil fertility and properties.

**EFFECTS OF HUMAC® AGRO**

- Sustainably increases soil fertility and supplies it with organic carbon.
- Improves the soil structure, optimizes soil pH and increases soil sorption and buffering capacity.
- Increases the content of hummus in soil.
- Significantly limits leaching of nutrients (N, P, K, Ca, Mg et al. mineral and trace elements).
- Provides better effectiveness of organic, organic-mineral and mineral fertilizers.
- Increases the volume and quality of agricultural production.
- Improves conditions for development of microorganisms and accelerates decomposition of organic compounds, substrates and substances in soil.
- Binds heavy metals, pesticides and other toxins into complexes unusable by plants.
- Prevents soil erosion.
- Retains water in the soil - improves plant stamina in dry conditions.
- Benefits the mineralisation and immobilisation of nitrogen in the soil.

**HELPS AGAINST DROUGHT**

- Increases the water capacity of soil.
- Prevents soil cracking, surface drainage of water and soil erosion.
- Improves soil structure, prevents water loss and reduces the leaching of nutrient from soil.

**HUMAC® AGRO ACTS MINIMUM 4 YEARS FROM APPLICATION**

- More efficient use of basic fertilizers
- Increased soil fertility
- Improved quality parameters of the crop
- Reduced costs for fertilizing by up to 50%
- Increased yields by up to 20%
- Increased crop price
RESULTS OF TESTS AND PILOT EXPERIMENTS

Impact on sugar beet yield and sugar content

<table>
<thead>
<tr>
<th>HUMAC® Agro</th>
<th>Sugar beet yield t/ha</th>
<th>Polarizing sugar yield t/ha</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>72,81</td>
<td>13,42</td>
</tr>
<tr>
<td>250 kg/ha</td>
<td>86,39</td>
<td>+19%</td>
</tr>
<tr>
<td>250 kg/ha</td>
<td>15,25</td>
<td>+14%</td>
</tr>
<tr>
<td>500 kg/ha</td>
<td>95,97</td>
<td>+32%</td>
</tr>
<tr>
<td>500 kg/ha</td>
<td>17,39</td>
<td>+30%</td>
</tr>
</tbody>
</table>

Strawberries – 10% increase in yield

Paprika and corn – difference in growth and root system

Sunflowers – 29% increase in yield
HUMAC® Agro ACCESSES NUTRIENTS

- **Humic acids** are efficient chelating agent that accesses nutrients locked in the soil.
- **Humic acids** stimulate the formation of soil micro-flora, which also contributes to the availability of nutrients.
- Soil rich in **humic acids** retains nutrients at plant roots.

### CONTENT OF AVAILABLE NUTRIENTS IN THE SOIL

<table>
<thead>
<tr>
<th></th>
<th>Carbon (C)</th>
<th>humus</th>
<th>pH</th>
<th>phosphorus (P)</th>
<th>potassium (K)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 year HUMAC® Agro 300kg/ha</td>
<td>1.67</td>
<td>2.87</td>
<td>6.42</td>
<td>61</td>
<td>230</td>
</tr>
<tr>
<td>2 year</td>
<td>1.71</td>
<td>2.94</td>
<td>6.41</td>
<td>64</td>
<td>223</td>
</tr>
<tr>
<td>3 years</td>
<td>1.75</td>
<td>3.02</td>
<td>6.46</td>
<td>73</td>
<td>238</td>
</tr>
<tr>
<td>After 3 years</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>+5%</td>
<td>+5%</td>
<td></td>
<td>+10%</td>
<td>+2%</td>
</tr>
</tbody>
</table>

Trace amounts of humic acids are present all around us. Larger concentrations are found in healing muds, manure, topsoil and mostly in peat, lignite and brown coal. However the most abundant natural source of humic acids is leonardite (Oxihumolit), with 50-80% contents.

Most leonardite bearings contain a large number of heavy metals - humic acids can not be used in their original form and must be chemically treated to humic salts, thereby changing the structure of humic acids and their effectiveness.

Humic acids in HUMAC® are used in their original natural form because they come from a unique source of leonardite in Europe that has not been contaminated with heavy metals.

Suitable for use in ecological farming

www.humac.bio