Index

• Background
  • Involvement
  • Our Approach
• Soil Samples
• Typical problems
• Recommendation
• Organic strategy
• Application method
• Future prospects
## Omnia approach

### Driving force

Prosperity for Omnia through prosperity on the farm

### Core competencies

- Plant nutrition
- Soil Science
- Plant physiology

### Five Pillars of Sustainability

- Risk reduction
- Productivity
- Resource protection
- Social acceptability
- Economic Viability

---

![Nutriology](image)
Nutrient removal

PLANT REMOVAL

• **SASRI** (Meyer, 2002)

• **PER TON**
  - = 1 – 1.6 kg N
  - = 0.15 – 0.3 kg P
  - = 1.5 – 2.5 kg K

• **PER 120 TON**
  - = 120 – 192 kg
  - = 18 – 36 kg
  - = 180 – 300 kg
## Soil analysis

<table>
<thead>
<tr>
<th>DATE</th>
<th>pH</th>
<th>NUTRIENT mg/kg</th>
<th>CATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>5-6</td>
<td></td>
<td>P</td>
<td>K</td>
</tr>
<tr>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DATE</th>
<th>INTERPRETATION</th>
<th>MICRO-ELEMENTS (mg/kg)</th>
<th>RATIO</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Clay %</td>
<td>Texture Class</td>
<td>Organic %</td>
</tr>
<tr>
<td></td>
<td>Org C</td>
<td>Org Mat</td>
<td></td>
</tr>
<tr>
<td></td>
<td>pH</td>
<td>NUTRIENTS (ppm)</td>
<td></td>
</tr>
<tr>
<td>---------------</td>
<td>-----</td>
<td>----------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>(KCl) 5-6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Malelane</strong></td>
<td>6.2</td>
<td>42 248 2010 1230 62</td>
<td>3% 46% 46% 1% 0% 3%</td>
</tr>
<tr>
<td><strong>Komatipoort</strong></td>
<td>5.7</td>
<td>13 139 2340 1120 232</td>
<td>1% 49% 38% 4% 4% 3%</td>
</tr>
<tr>
<td>Soil analysis</td>
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<tr>
<td>---------------</td>
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<td><strong>CATIONS</strong></td>
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<tr>
<td><strong>(ppm)</strong></td>
<td><strong>pH</strong></td>
<td><strong>Na</strong></td>
<td><strong>K</strong></td>
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<td><strong>K</strong></td>
<td><strong>Ca</strong></td>
<td><strong>Mg</strong></td>
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<td>232</td>
<td>1%</td>
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</table>

**Malelane** 6.2

- P: 42
- K: 248
- Ca: 2010
- Mg: 1230
- Na: 62
- K: 3%
- Ca: 46%
- Mg: 46%
- Na: 1%
- H: 0%
- Micro's: 3%

**Komatipoort** 5.7

- P: 13
- K: 139
- Ca: 2340
- Mg: 1120
- Na: 232
- K: 1%
- Ca: 49%
- Mg: 38%
- Na: 4%
- H: 4%
- Micro's: 3%
A standard of 3% micro-nutrients was used for the calculations.
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<tr>
<th>Location</th>
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<td>46% 0% 62 1230</td>
<td>60% 1%</td>
<td>10% 3%</td>
</tr>
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</table>

- **Sulfur products**
- **Calsitic Lime**
- **Increase K fertilizer**
- **Increase P fertilizer**
Organic soil enhancement

RAW MATERIAL

- AMINO ACID: 8%
- SUGARS: 5%
- CELLULOSE: 45%
- HEMI CELLULOSE: 20%
- LIGNIN: 20%
- FATS AND WAX: 2%

Fast Break down

MINERALIZATION

NO₃⁻, NH₄⁺, PO₄⁻, K⁺, Ca²⁺, Mg²⁺

HUMIFICATION (20-30% Humification)

HUMUS

- HUMINE: not soluble
- HUMIC ACID: high pH water soluble
- FULVIC ACID
- ULMIC ACID: Alcohol soluble
OmniPrecise™

1 ha grid
pH(KCl) = 5.2

pH(KCl) = 4.1
Application timing
THANK YOU
Fertilizer

Schalk Lombaard

27 July 2007
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**PLANT REMOVAL**

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    - $= 1 - 1.6$ kg N
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<td>pH (KCl)</td>
<td>P</td>
<td>K</td>
<td>Ca</td>
</tr>
<tr>
<td>5-6</td>
<td>6-8%</td>
<td>60-70%</td>
<td>12-20%</td>
<td>&lt;2%</td>
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<table>
<thead>
<tr>
<th>DATE</th>
<th>INTERPRETATION</th>
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<tr>
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<td>Fe</td>
</tr>
<tr>
<td></td>
<td>&gt;48</td>
<td>40 - 125</td>
<td>2-10</td>
<td>6-20</td>
<td>0.5-2</td>
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Na:K Ratio

Low

High
A standard of 3% micro-nutrients was used for the calculations

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<tr>
<th></th>
<th>pH 5-6</th>
<th>Fe 1%</th>
<th>Cu 1%</th>
<th>Zn 6-8%</th>
<th>Ca 60-70%</th>
<th>Mg 12-20%</th>
<th>Na &lt;2%</th>
<th>H 10%</th>
<th>Micro's 3-5%</th>
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International Society of Sugar Cane Technologists

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omnia NUTRIOLOGY • NUTRILOGIE
HK01: 02 (73.5 ha.)

1 ha grid
HK01; 02 (72.64 ha.)

pH(KCL) = 5.2

HK01; 02 (72.64 ha.)

pH(KCL) = 4.1

Field Boundary
Relative High pH(KCL) 5.2
Megasurface: pH(KCL)

- 3 - 3.5 (0.0 ha.)
- 3.5 - 4 (0.0 ha.)
- 4 - 4.5 (14.4 ha.)
- 4.5 - 5 (35.4 ha.)
- 5 - 5.5 (17.0 ha.)
- 5.5 - 6.5 (5.8 ha.)
- 6.5 - 7.5 (0.0 ha.)
- > 7.5 (0.0 ha.)

Field Boundary
Relative Low pH(KCL) 4.2
Megasurface: pH(KCL)

- 3 - 3.5 (0.0 ha.)
- 3.5 - 4 (0.0 ha.)
- 4 - 4.5 (14.4 ha.)
- 4.5 - 5 (35.4 ha.)
- 5 - 5.5 (17.0 ha.)
- 5.5 - 6.5 (5.8 ha.)
- 6.5 - 7.5 (0.0 ha.)
- > 7.5 (0.0 ha.)
Application timing
THANK YOU