Growing PROCESSING TOMATOES IN ITALY

KEY FINDINGS

32% marketable yield increase with POLY4 treatment

Improved economic return

Uniform ripening and enhanced fruit quality

POLY4 BENEFITS

- A low Cl- source of K, Ca, Mg and sulphate-S, plus micro nutrients
- Sustained nutrient delivery
- Suitable for organic farming
- Low CO₂ emissions
- Blends, stores and spreads well with conventional equipment

A CASE FOR POLY4

- Italy is the largest producer of processing tomatoes in the EU with 4.8 million tonnes harvested in 2018.
- Campania is the most important tomato producing region in Italy.
- Organic farming, particularly of tomatoes, has expanded rapidly in Italy (1,316 ha in 2015 to 2,700 ha in 2018).
- Tomatoes benefit from large K inputs, as well as Ca and Mg, for maximum yield and quality.
- Tomatoes can be sensitive to chloride, and so the use of low-chloride fertilizers like POLY4 is preferred.

poly4.com
Despite a very fertile soil that is typical for the local tomato-growing area, the SOP + POLY4 blends significantly increased yield compared to both standard SOP treatments. This increased income on average by US$2,316/ha.

The POLY4-fertilized tomatoes had more fruit per plant and larger fruit. They also had less unmarketable produce.

Higher dry matter content is an important quality characteristic as it improves the consistency of pulped tomatoes. Lycopene is the pigment responsible for the distinctive red colour of tomatoes and is associated with decreasing risk of some types of cancer and cardiovascular disease.

The SOP + POLY4 (50:50) significantly increased both quality measures compared to SOP + kieserite.
EARLIER AND UNIFORM RIPENING

The POLY4-fertilized tomatoes matured significantly faster and more uniformly. This is beneficial for the mechanised harvest and processing of tomatoes.

Improved maturity followed earlier flowering and better root development.

<table>
<thead>
<tr>
<th>Percentage of ripe tomatoes</th>
<th>SOP</th>
<th>SOP + kieserite</th>
<th>SOP + POLY4 (75:25)</th>
<th>SOP + POLY4 (50:50)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ripe</td>
<td>83.2%</td>
<td>83.7%</td>
<td>93.8%</td>
<td>99.5%</td>
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<tr>
<td>Turning</td>
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<tr>
<td>Green</td>
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<td>Blossom end rote (BER)</td>
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</tbody>
</table>

Notes: 1) Instituto Nazionale di Statistica. Coltivazioni Ortive. Available at http://dati.istat.it. Accessed on 5 Sep 2019; 2) FoodWeb. Available at https://www.foodweb.it/2018/07/pomodoro-e-bio-boom/. Accessed on 5 Sep 2019; 3) Pre-trial soil levels: pH: 8.2; EC: 0.2 dS m$^{-1}$; 29 g kg$^{-1}$ SOM, 1680 mg N kg$^{-1}$, 57 mg P kg$^{-1}$, 481 mg K kg$^{-1}$, 2527 mg Ca kg$^{-1}$, 858 mg Mg kg$^{-1}$, CEC: 21 meq 100g$^{-1}$. Cultivar used was Impact F1. Plant density: 30,000 pl ha$^{-1}$. Crop was drip irrigated. 30 kg ha$^{-1}$ of N and 50 kg ha$^{-1}$ of P$_2$O$_5$ were applied via ammonium nitrate and DAP. POLY4 was only applied 3 days pre-transplant; 4) Statistical significance at p <0.05 with Fisher’s LSD test; 5) Crop price US$89/t.

Source: Sele Agroresearch Srl, Italy, 139000-SELE-139010-19 (tomato).