Growing ONIONS IN INDIA

**KEY FINDINGS**
Up to 13 t ha⁻¹ yield advantage over local practice
Increased bulb size and marketable yield
Improved plant development

**A CASE FOR POLY4**

- Total onion production in India in 2018 was 23 million tonnes across 1.3 million hectares.
- The recommended practice is to apply N + P, MOP-K and S from elemental sulphur. However, many farmers only apply N + P + MOP-K, or only N + P.
- POLY4 provides a plant available sulphate-sulphur in addition to a low-chloride potassium, magnesium and calcium.

poly4.com
All treatments received 120 kg N ha\(^{-1}\) and 40 kg P\(_2\)O\(_5\) ha\(^{-1}\) from urea and DAP. POLY4 (214 kg ha\(^{-1}\)) treatment received half of K\(_2\)O from POLY4 and half from MOP. POLY4 (429 kg ha\(^{-1}\)) treatment received all K\(_2\)O from POLY4.

**YIELD ADVANTAGE**

MOP + POLY4 (214 kg ha\(^{-1}\)) improved yield by 2.2 t ha\(^{-1}\) compared to MOP + S, 3.3 t ha\(^{-1}\) compared to MOP, and 13 t ha\(^{-1}\) compared to N + P. There was an additional yield benefit when POLY4 was used as the only K fertiliser (429 kg POLY4 ha\(^{-1}\)).

POLY4 treatments had the lowest proportion of non-marketable (smaller than 2.5 cm, with bulb rot or have bolted) onions by weight ensuring less produce was wasted and more was saleable.

**INCREASED BULB WEIGHT**

The bigger onions (over 4.5 cm in diameter) are the most valuable. As a proportion of total onion yield, POLY4 treatments had significantly more high-grade onions over standard practices.
**IMPROVED PLANT GROWTH**

Improved plant growth is important for the crop to gain a competitive advantage over weed species and for potentially greater bulb yields.

![Graph showing plant height at 75 DAP for different treatments](image)

* *DAP* (days after planting)

**BETTER CROP REVENUE**

Income was increased by US$392 with POLY4 (214 kg ha⁻¹) compared to the locally recommended MOP + S practice, and by US$581 compared to MOP.

![Graph showing crop revenue](image)

**Notes:** Crop statistics from Horticulture Statistics Division, Department of Agriculture, Coop & Farmers Welfare. Trial was a RCBD with three replicates. Pre-trial soil analysis: pH 8.3, 6 mg P kg⁻¹, 91 mg K kg⁻¹, 840 mg Ca kg⁻¹, 31 mg Mg kg⁻¹, 5 mg S kg⁻¹. Data analysed by Genstat ANOVA with means separation by Fisher's LSD test at 10% significance level. Revenue is the crop price of US$174 t⁻¹ onions multiplied by the yield.