

Source- sink modulation in Chinese potato through agronomic management in the southern laterites of Kerala, India

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INTRODUCTION & AIM

Productivity in tuber crops is highly governed by canopy development, photosynthetic capacity and translocation of photo assimilates to roots, which forms the economic part. Chinese potato [*Plectranthus rotundifolius* (Poir.) Spreng.], among tuber crops is constrained by the higher proportion of miniature tubers, despite it being higher in number. Adoption of proper management strategies can favourably influence the vegetative growth, size of tubers and result in higher yields.



- To evaluate agronomic management practices for source- sink modulation and higher yields in chinese potato

METHOD

Location : College of Agriculture,
Thiruvananthapuram (KAU), India

Design : Split Plot Replications : 4

Season : 2019-20 and 2020-21

Treatments

Main plot

m₁: bed method (30 cm x 15 cm)

m₂: bed method (30 cm x 30 cm)

m₃: ridge method (30 cm x 15 cm)

m₄: ridge method (30 cm x 30 cm)

m₅: mound method (30 cm x 30 cm)

Sub plot treatments (combinations of)

n₁: 60:30:120 kg NPK ha⁻¹ + PGPR Mix 1

n₂: 60:30:120 kg NPK ha⁻¹

g₁: humic acid @ 5 g L⁻¹,

g₂: benzyl adenine @ 50 mg L⁻¹

g₃: water spray



RESULTS & DISCUSSION

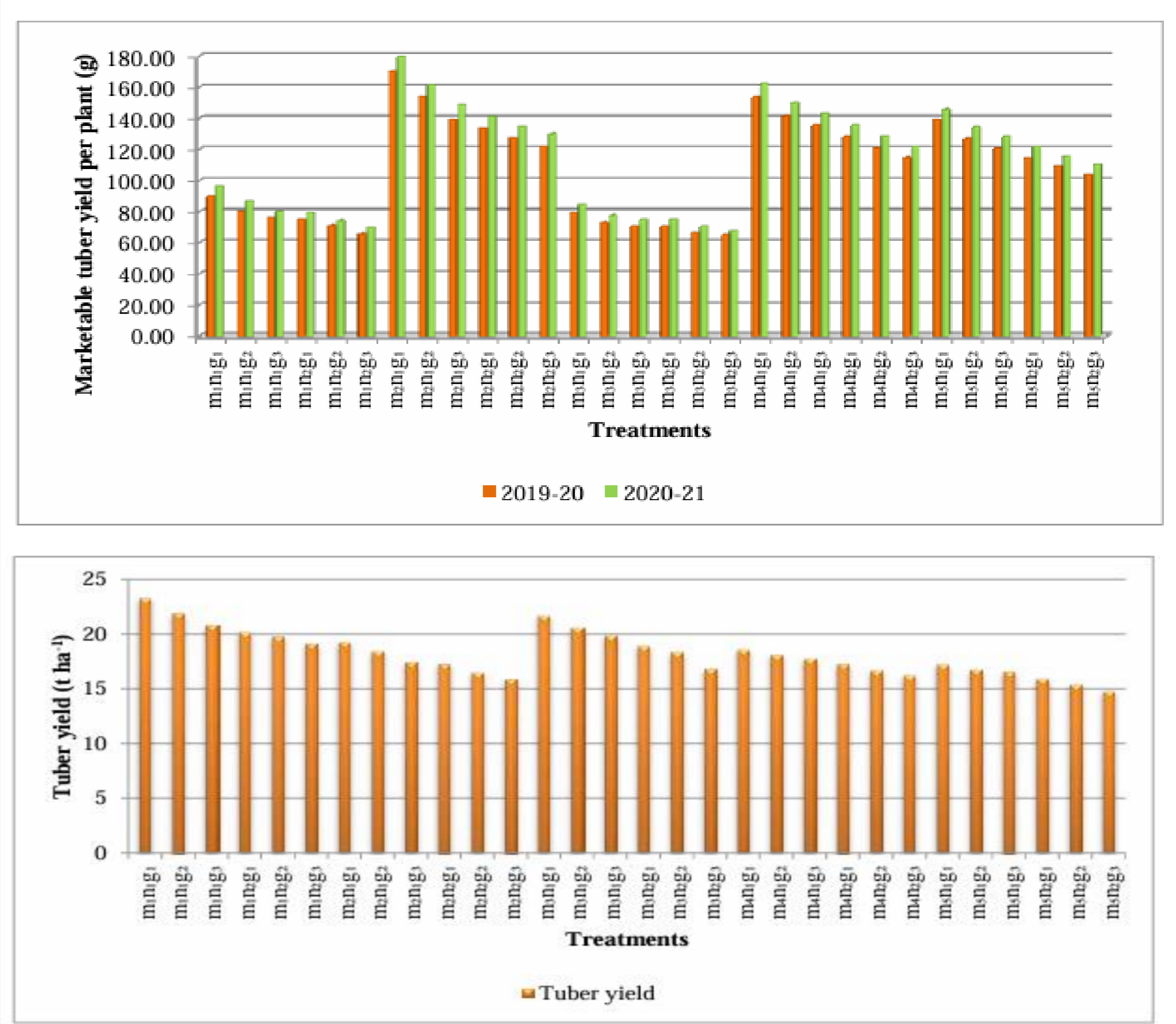


Fig.1 Effects of planting method x nutrient management + GR on tuber yields

Pooled analysis revealed per hectare tuber and marketable tuber yield to be significantly the highest in bed method of planting with closer spacing of 30 cm x 15 cm (20.93 & 17.46 t ha⁻¹ respectively). Nutrient management with 60:30:120 kg NPK ha⁻¹ & PGPR Mix 1 + humic acid resulted in 19.7 to 21.7 % yield increase over sole fertilizer application

CONCLUSION

- Agronomic management of planting on beds at 30 cm x 15 cm and NPK application @ 60:30:120 kg ha⁻¹ along with PGPR Mix 1 + humic acid proved superior in enhancing the source strength and realizing higher yields.
- Per plant performance was markedly better under wider spacing and per hectare yields in closer spacing.

FUTURE WORK

- *Explore impacts of conservation tillage and nano nutrition
- *Phenological studies in relation to environmental parameters