

Parasitic Contamination of Fresh Green Leafy Vegetables Sold in Open Markets in Sri Lanka during the Second Inter-Monsoon Season: A Cross-Sectional Study

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INTRODUCTION & AIM

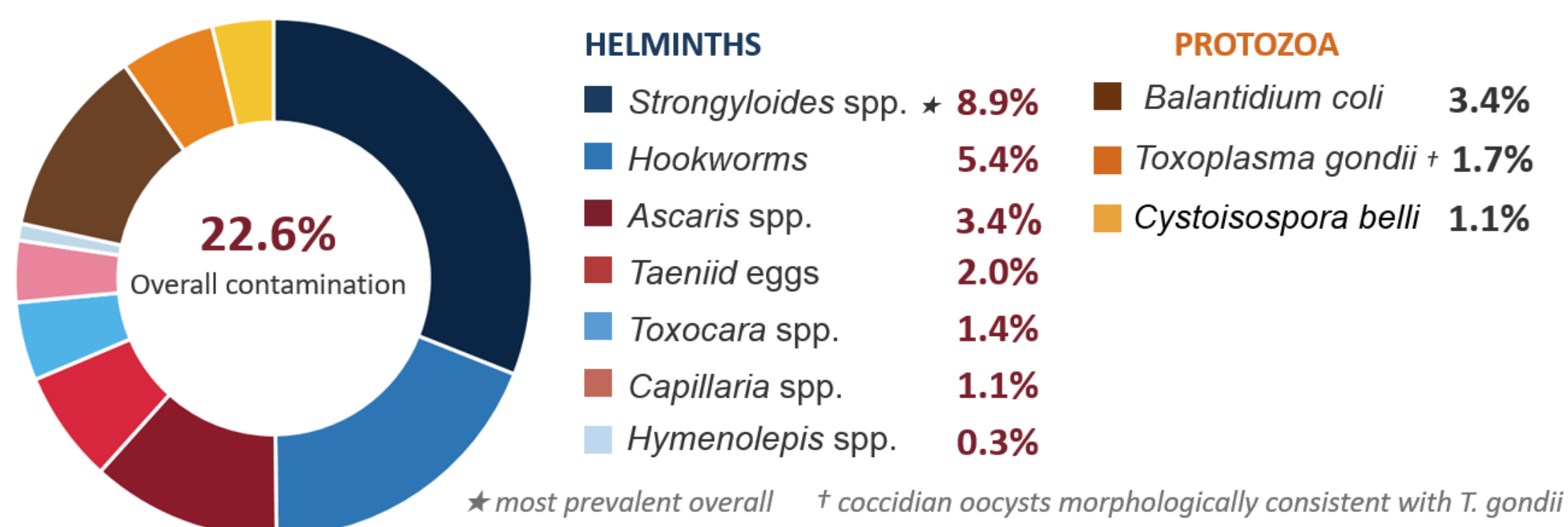
- Intestinal parasitic infections remain a public health concern in Sri Lanka, where contaminated green leafy vegetables are an important transmission route[1].
- This study assessed intestinal parasite prevalence in fresh green leafy vegetables across all nine provinces of Sri Lanka and examined variations in parasitic contamination according to the site of collection in different geographical locations.

METHOD

- A cross-sectional study was conducted from 1 October to 30 November 2025 during the Second Inter-Monsoon (SIM) season in Sri Lanka.
- Ninety open markets were included, with ten per province.
- Five fresh green leafy vegetable types consumed either raw, steamed, or half-cooked namely; *Centella asiatica* (n=84), *Alternanthera sessilis* (n=86), *Ipomoea aquatica* (n=83), *Trianthema portulacastrum* (n=52), and *Amaranthus viridis* (n=44) were selected.
- Sample processing & Parasitological examination
50 g sample → 5% Tween 20 wash → overnight sedimentation → centrifugation (2000 × g, 15 min) → microscopic examination → Species identification
- Data were analyzed using R software (version 4.5.1), with Pearson Chi-square test applied at P ≤ 0.05 significance level.

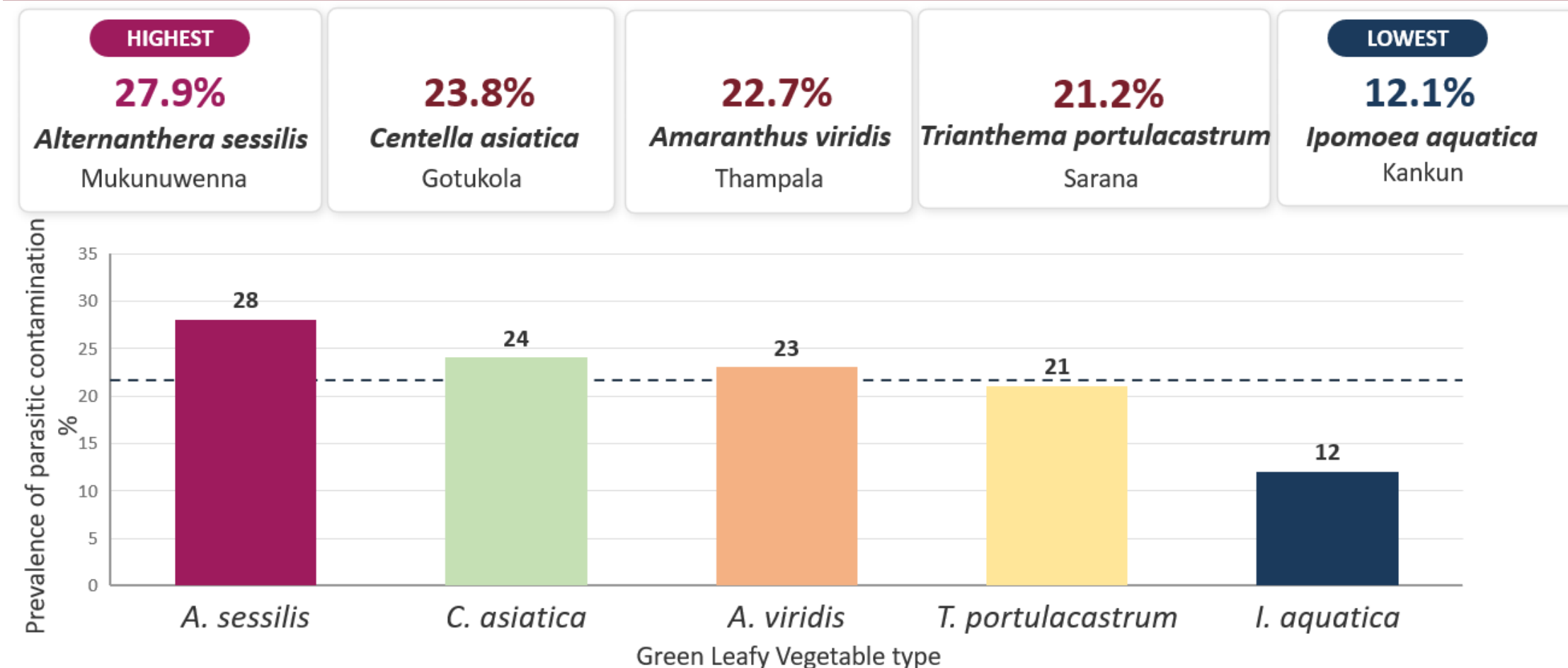
RESULTS & DISCUSSION

Overall Contamination & Parasitic Species Distribution



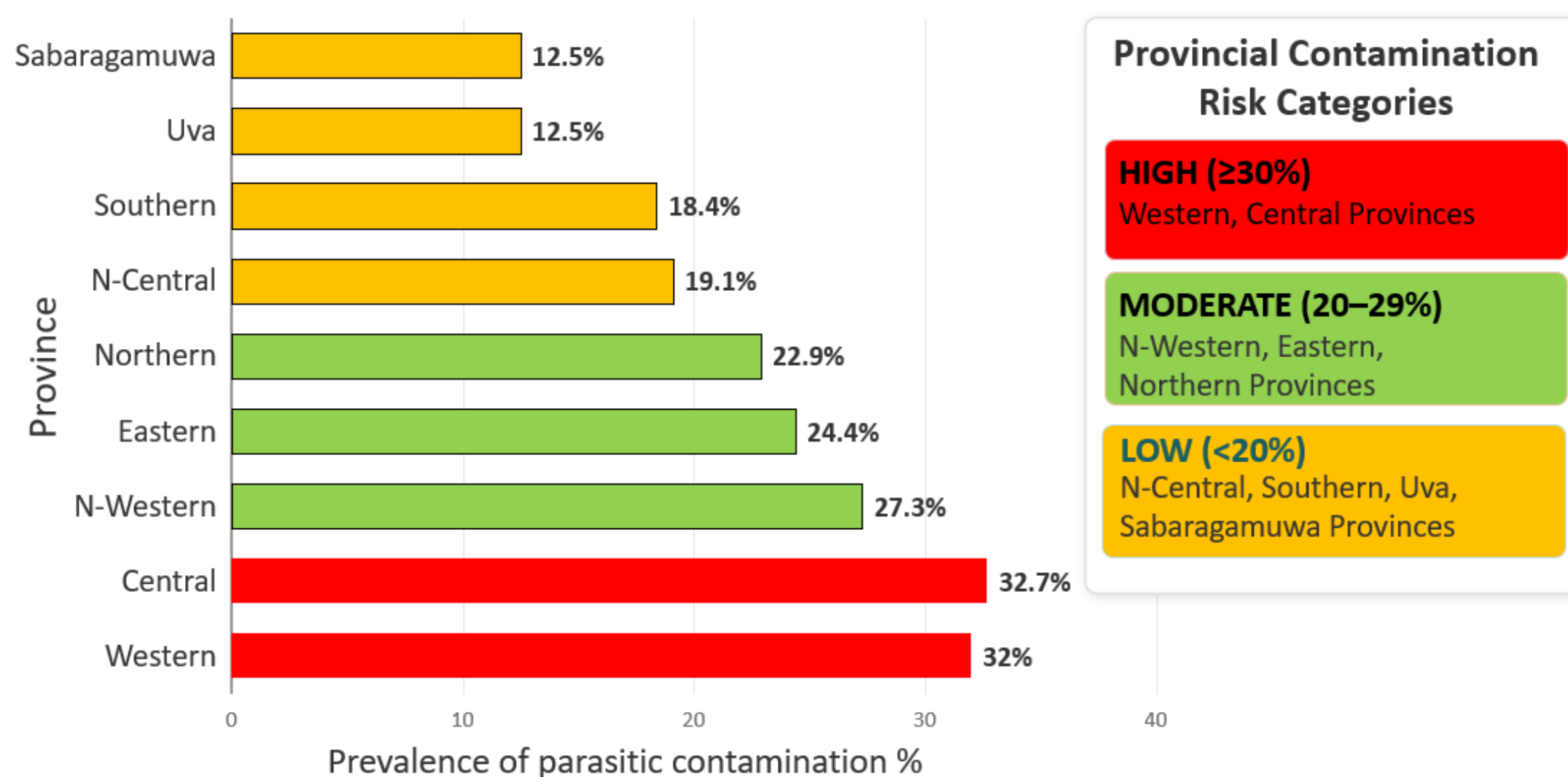
- The overall parasitic contamination rate (22.6%) was consistent with previous findings reported in Sri Lanka[1] and comparable studies from other countries[2,3,4].
- Strongyloides* spp. (8.9%) predominance is notable, as its percutaneous transmission suggests active larval proliferation in warm inter-monsoon soils rather than direct faecal contamination of produce.

Distribution of parasitic contamination across vegetable types

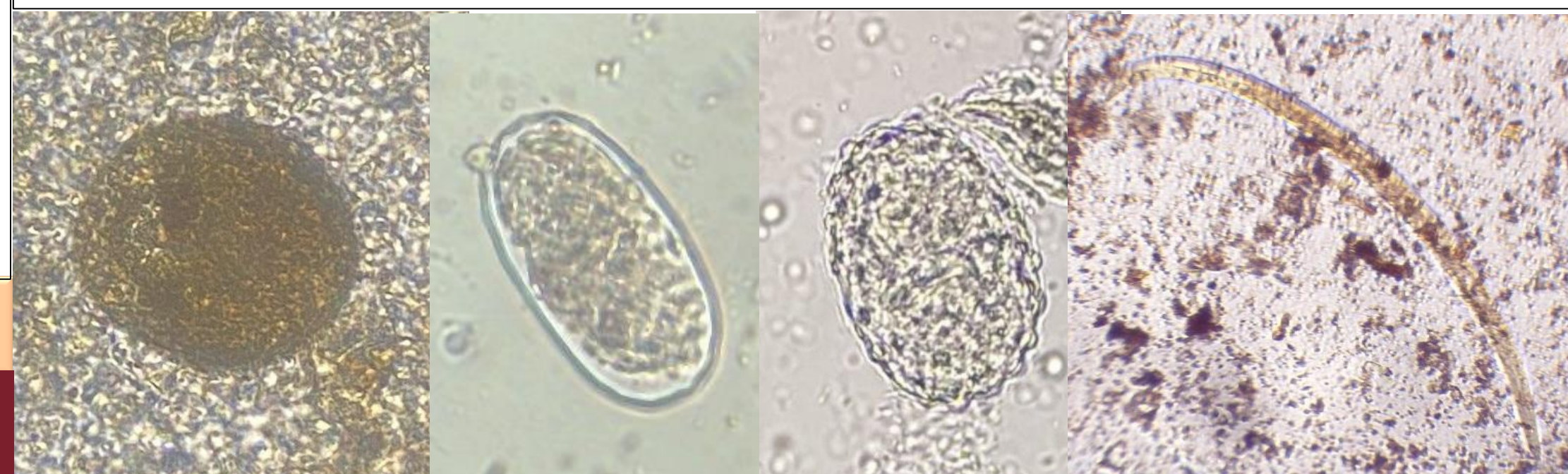


- A. sessilis* is typically cultivated in moist, low-lying areas, creating favorable conditions for soil-to-leaf transfer of parasite stages.
- The comparatively lower prevalence in *I. aquatica* may reflect its aquatic growing environment and smoother leaf morphology, though water contamination remains a potential route.

Parasitic Prevalence Across Nine Provinces



Lack of provincial variation in contamination suggests it is driven more by post-harvest handling, storage, and transport than by region-specific cultivation practices.



Balantidium coli cyst x 400 Hookworm egg x 400 *Ascaris* spp. egg x 400 *Strongyloides* spp. larva x 100

CONCLUSION

- Fresh green leafy vegetables sold across Sri Lanka were contaminated with intestinal parasitic stages, indicating a widespread public health risk.
- This study confirms uniform parasitic contamination of fresh green leafy vegetables across all nine provinces of Sri Lanka, regardless of vegetable type or location (P > 0.05).
- This pattern indicates that contamination is likely driven by common environmental exposure routes and shared post-harvest handling practices rather than crop- or region-specific factors.
- The study was conducted during the Second Inter-Monsoon season, a wet climatic period characterized by high rainfall and surface runoff, which may support the environmental persistence and dispersion of parasitic stages.

FUTURE WORK / REFERENCES

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