



Qualitative phytochemical analysis and estimation of secondary metabolites and antibacterial activity of *Phoenix zeylanica* and *Argyreia populifolia*

GOOD HEALTH & WELL-BEING

INTRODUCTION

Plant parts are believed to possess certain medicinal properties (traditional uses, active compounds, potential health benefits etc.)



Fig 1. *Argyreia populifolia*

- Use to treatment for Gum diseases, dog bites and heart diseases



Fig 2. *Phoenix zeylanica*

- Use to treatment for Toothache and Gonorrhea

METHODOLOGY

- Preparation of sample for leaves, roots, and stems/bark for both plants.



Fig 3. *P.zeylanica* plant materials



Fig 4. Grinding powders of *P.zeylanica*



Fig 5. Ethanol and Hexane extraction of *P.zeylanica*



Fig 6. *A. Populifolia* plant materials



Fig 7. Grinding powders of *A. populifolia*



Fig 8. Ethanol and Hexane extractions of *A. populifolia*

Test for phytochemical constituents
(Alkaloid, Terpenoid, Flavonoid, Phenol, Tannin, Saponin, Steroid)

Quantitative phytochemical analysis

- Total phenol content
- Total Flavonoid content
- Total Tannin content

Antibacterial activity

- Use Disc diffusion method. (Escherichia coli, Bacillus circulans, Pseudomonas aeruginosa, Staphylococcus aureus)

RESULTS AND DISCUSSION

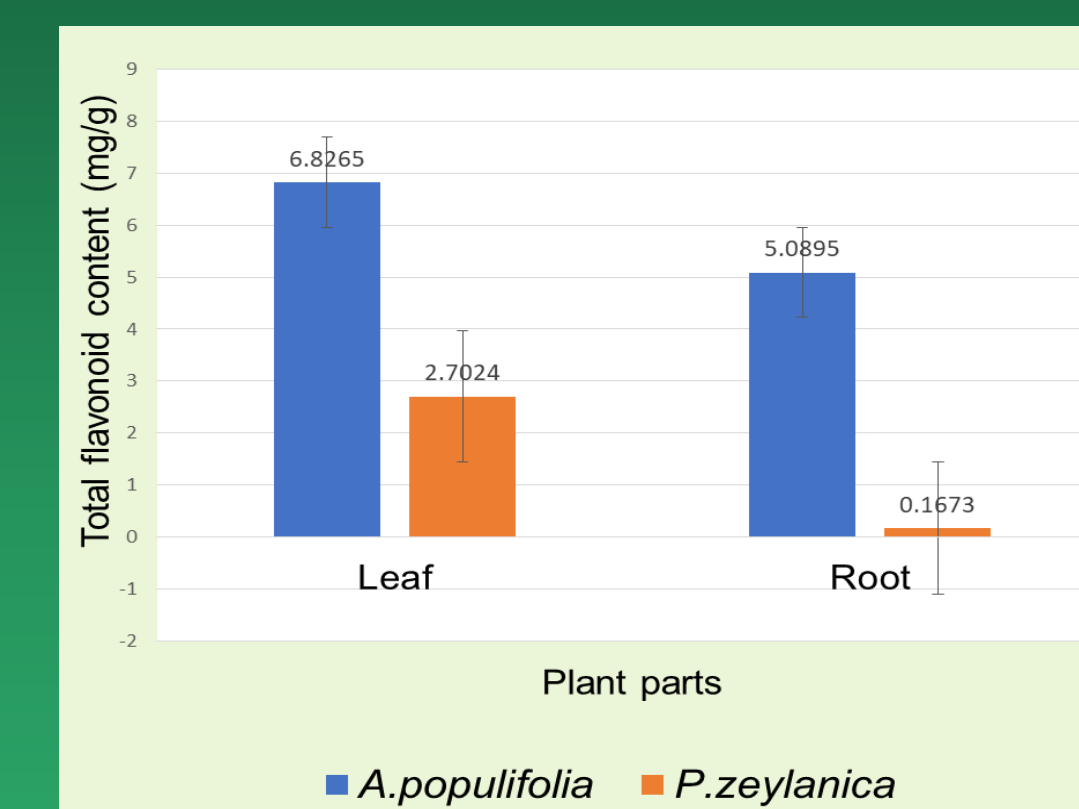
Table 1. Results of qualitative phytochemical analysis of *Phoenix zeylanica*

Test	Ethanol extract			Hexane extract		
	leaf	root	stem	leaf	root	stem
Alkaloids	-	-	-	-	-	-
Flavonoids	+	+	-	-	-	-
Phenols	+	+	+	-	-	-
Tannin	+	+	+	-	-	-
Terpenoids	+	+	+	-	-	-
Saponin	-	+	+	-	-	-
Steroids	-	+	+	-	-	-

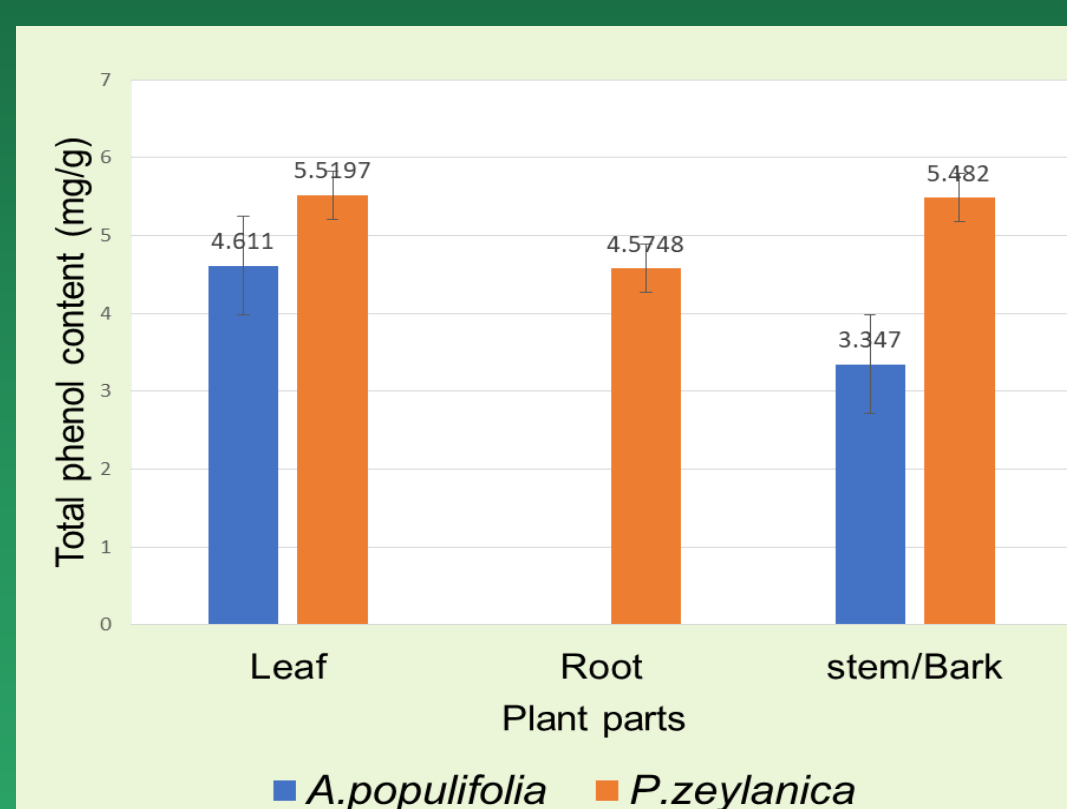
Table 2. Results of qualitative phytochemical analysis of *Argyreia populifolia*

Test	Ethanol extract			Hexane extract		
	leaf	root	bark	leaf	root	bark
Alkaloids	-	-	-	-	-	-
Flavonoids	+	+	-	-	-	-
Phenols	+	+	-	-	-	-
Tannin	+	+	-	-	-	-
Terpenoids	-	-	-	-	-	-
Saponin	-	-	-	-	-	-
Steroids	+	+	+	-	-	-

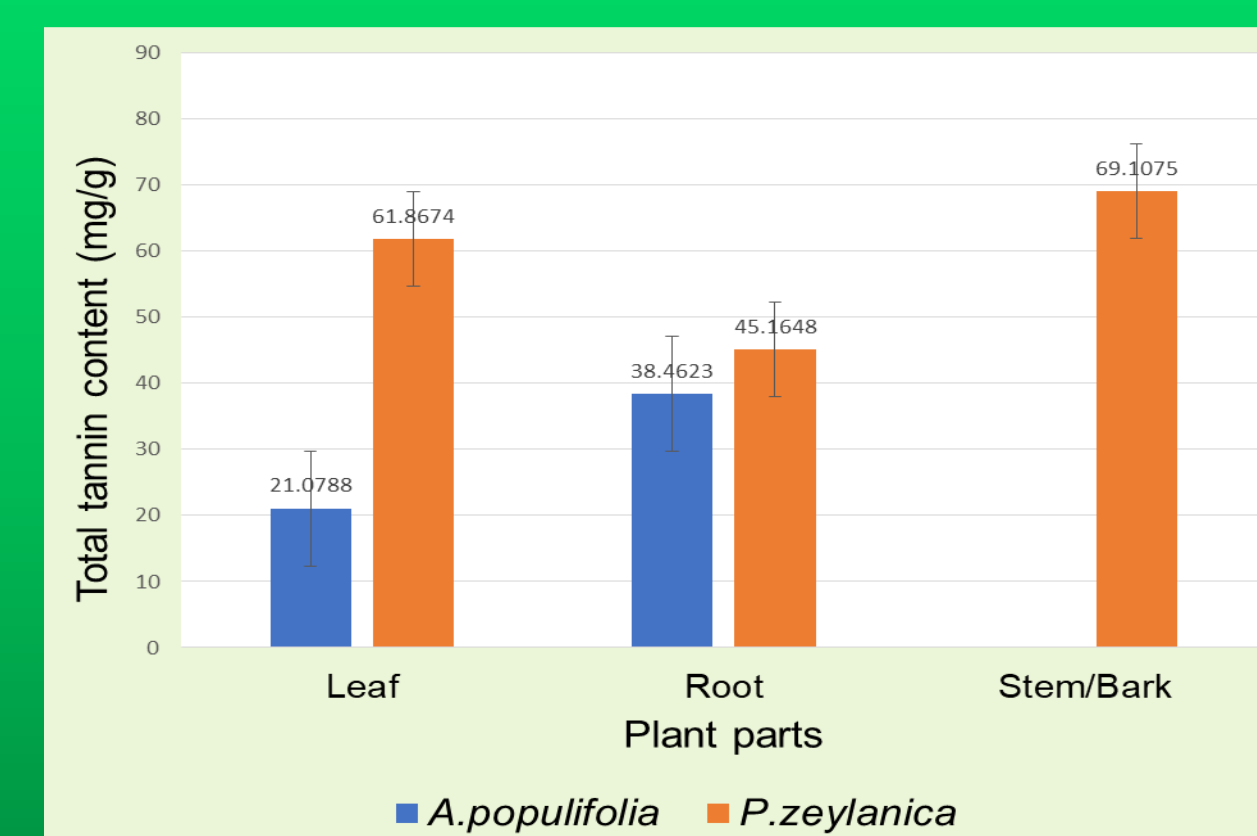
Results of quantitative phytochemical analysis



Graph 1. Total Flavonoid content of *A. populifolia* and *P. zeylanica*

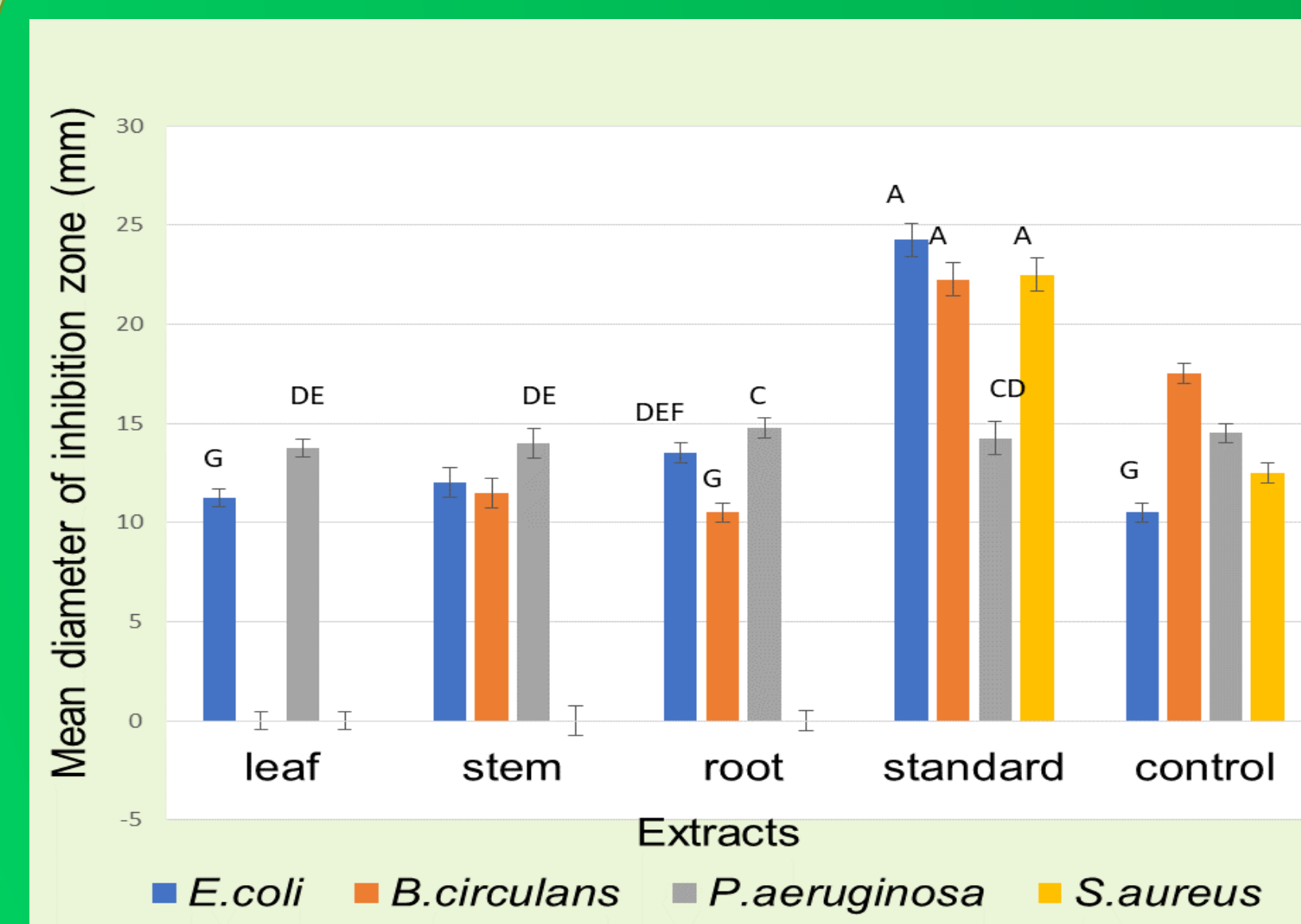


Graph 2. Total Phenolic content of *A. populifolia* and *P. zeylanica*

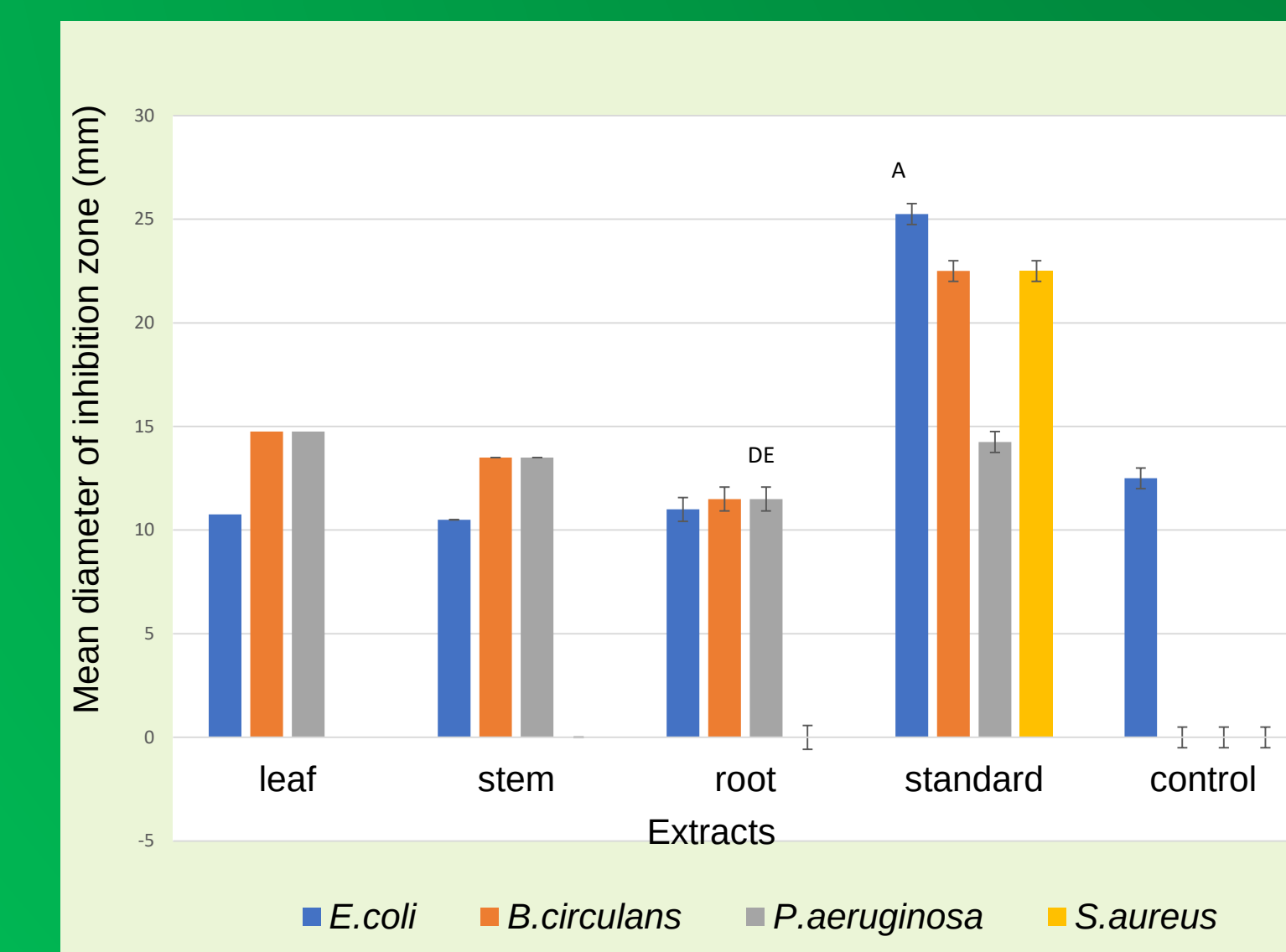


Graph 3. Total Tannin content of *A. populifolia* and *P. zeylanica*

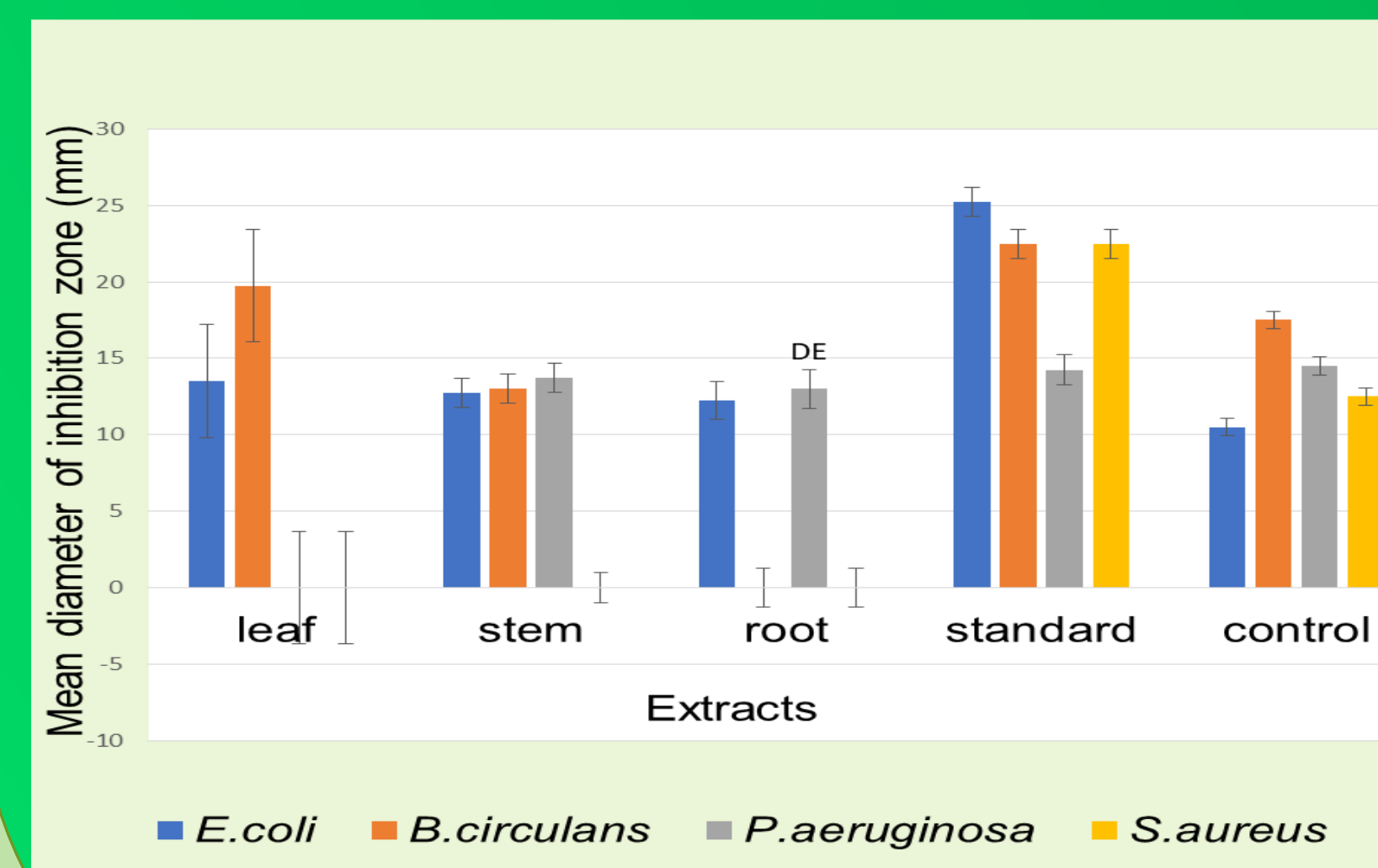
Results of Antibacterial activity



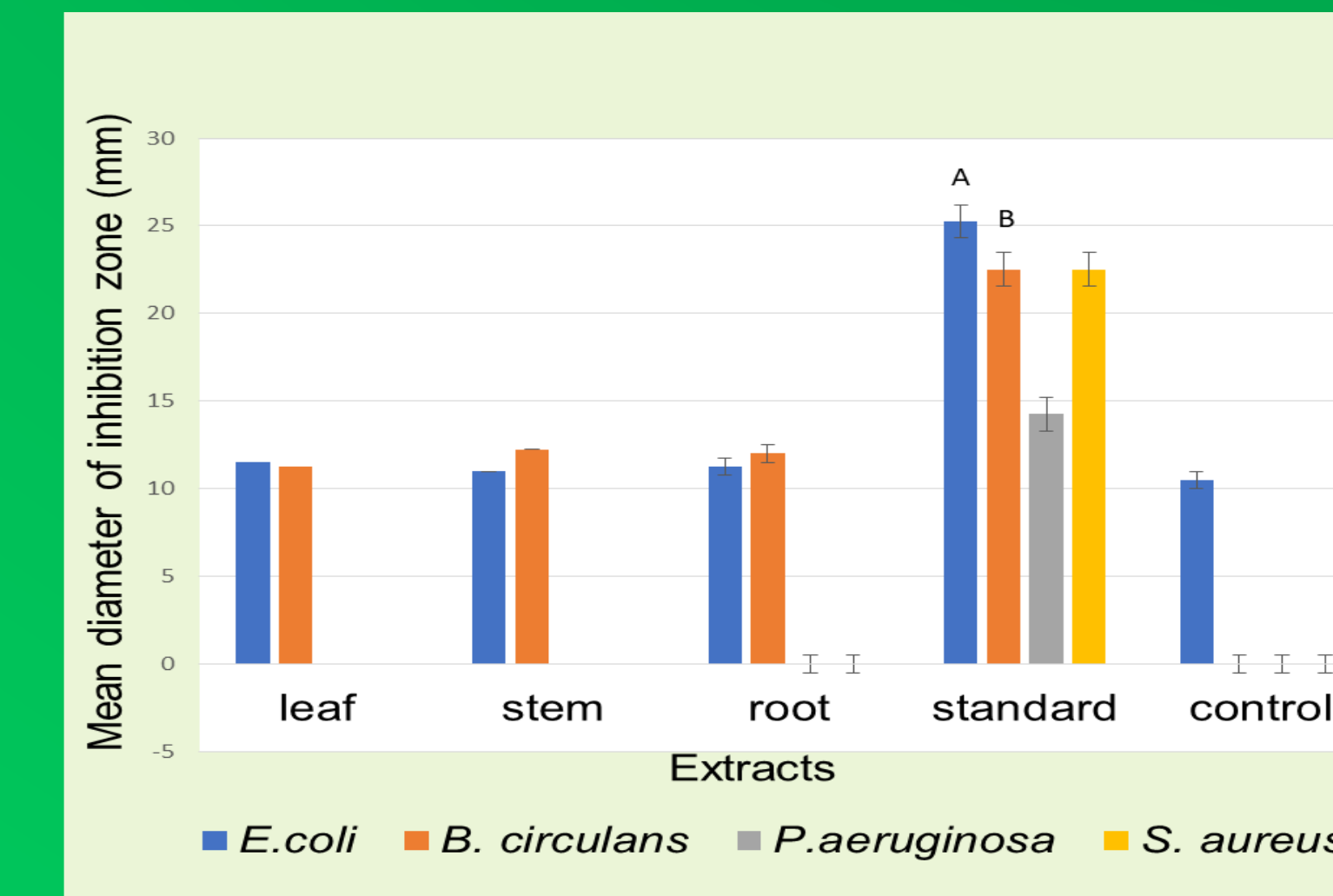
Graph 4. Antibacterial activity of *A. populifolia* ethanolic extracts



Graph 5. Antibacterial activity of *A. populifolia* Hexane extracts



Graph 6. Antibacterial activity of *P.zeylanica* ethanolic extracts



Graph 7. Antibacterial activity of *P.zeylanica* hexane extracts

CONCLUSION

- Qualitative phytochemical analysis indicated most of tested phytochemicals present in ethanolic extracts only.
- Argyreia populifolia* leaf had the highest amount of flavonoids.
- Phoenix zeylanica* bark had contain highest amount of phenol and tannin.
- Antibacterial activity was exhibited by all extracts of plant parts.
- Hexane extracts of *A. populifolia* showed significantly higher antibacterial activity than ethanolic extracts.
- Ethanolic extracts of *P.zeylanica* showed significantly higher antibacterial activity than hexane extracts.
- Further work should be carried out to isolate, purify, and characterize the active constituents responsible for the activity of these plants.

FUTURE WORKS

- To advance our understanding, future studies should focus on the further characterization and identification of the phenolic, tannin, and flavonoid compounds in both plant materials.
- Investigation the plant's parts can be used to treat other conditions beside above mention diseases. EX; Anti-inflammation, Anti-cancer properties.

REFERENCE

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