

# Antimicrobial and Antifungal Properties of Curry Plant (*Helichrysum italicum*)



PRESENTER:  
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**BACKGROUND:** Plant extracts are used as more affordable antibiotic resistance with lesser side effects. This experiment focuses on the properties of curry plant.

## METHODS

1. Collect, dry and grind curry plant.
2. Add 1ml 100% solvents with a 1:1 v/v ratio, let steep for 15 minutes, vortex and spin
3. Swab TSA plates with *Pseudomonas putida* / *Staphylococcus aureus*, add 10uL extract to filter paper disks, incubate for 24 hours at 30C
4. Yeast growth assays = 9 jars/balloons, let yeast rise in sugar water in jars, add 0.04% v/v ratio, measure diameter of balloons in throughout 30C incubation for 25 minutes

## RESULTS

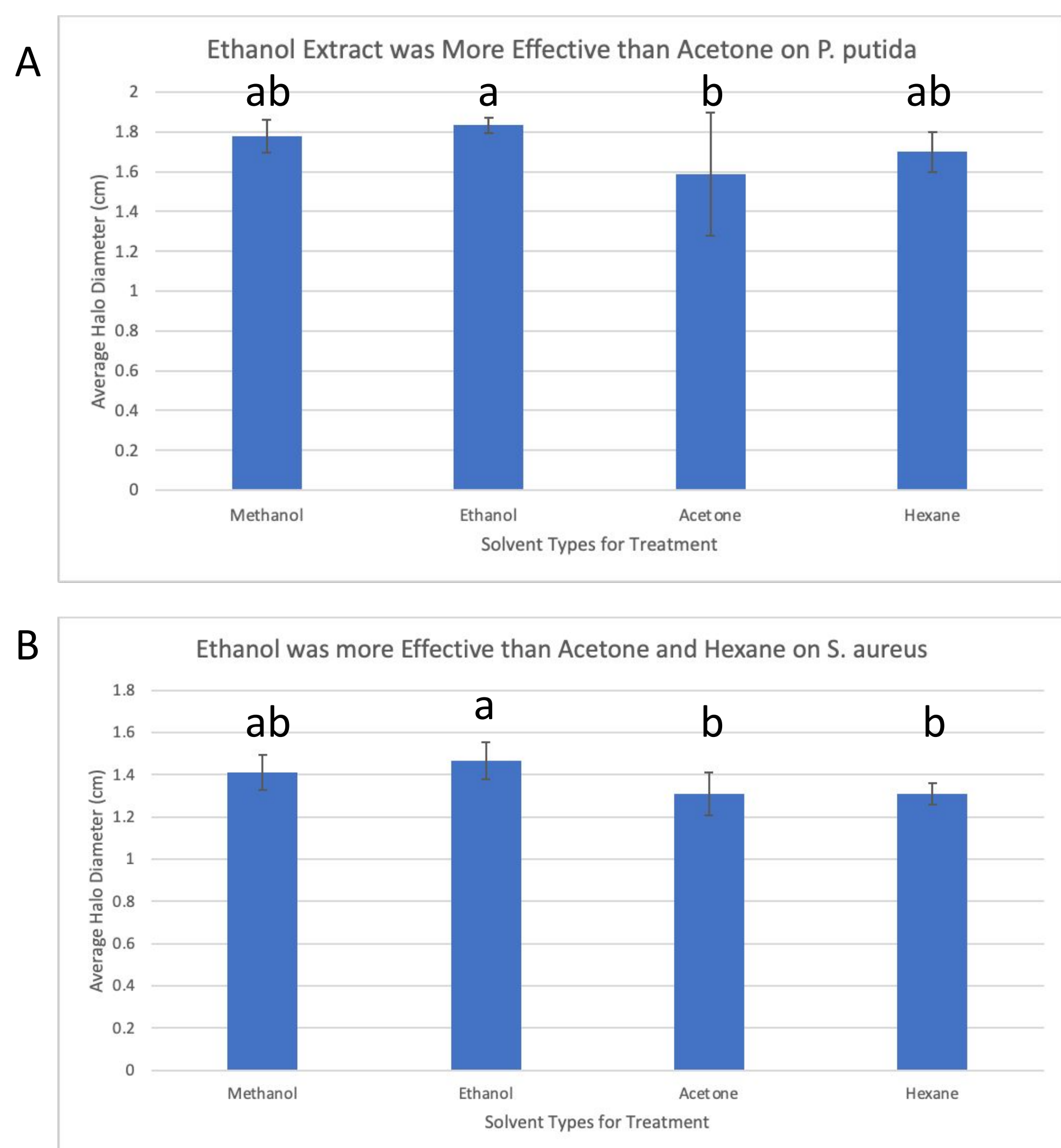


Fig. 1: A: Disk diffusion assay effect of *Helichrysum italicum* extracts on *P. putida* and B: *S. aureus*. One-Way ANOVA Test and Tukey HSD  $p < 0.05$ ,  $df = 3$ .

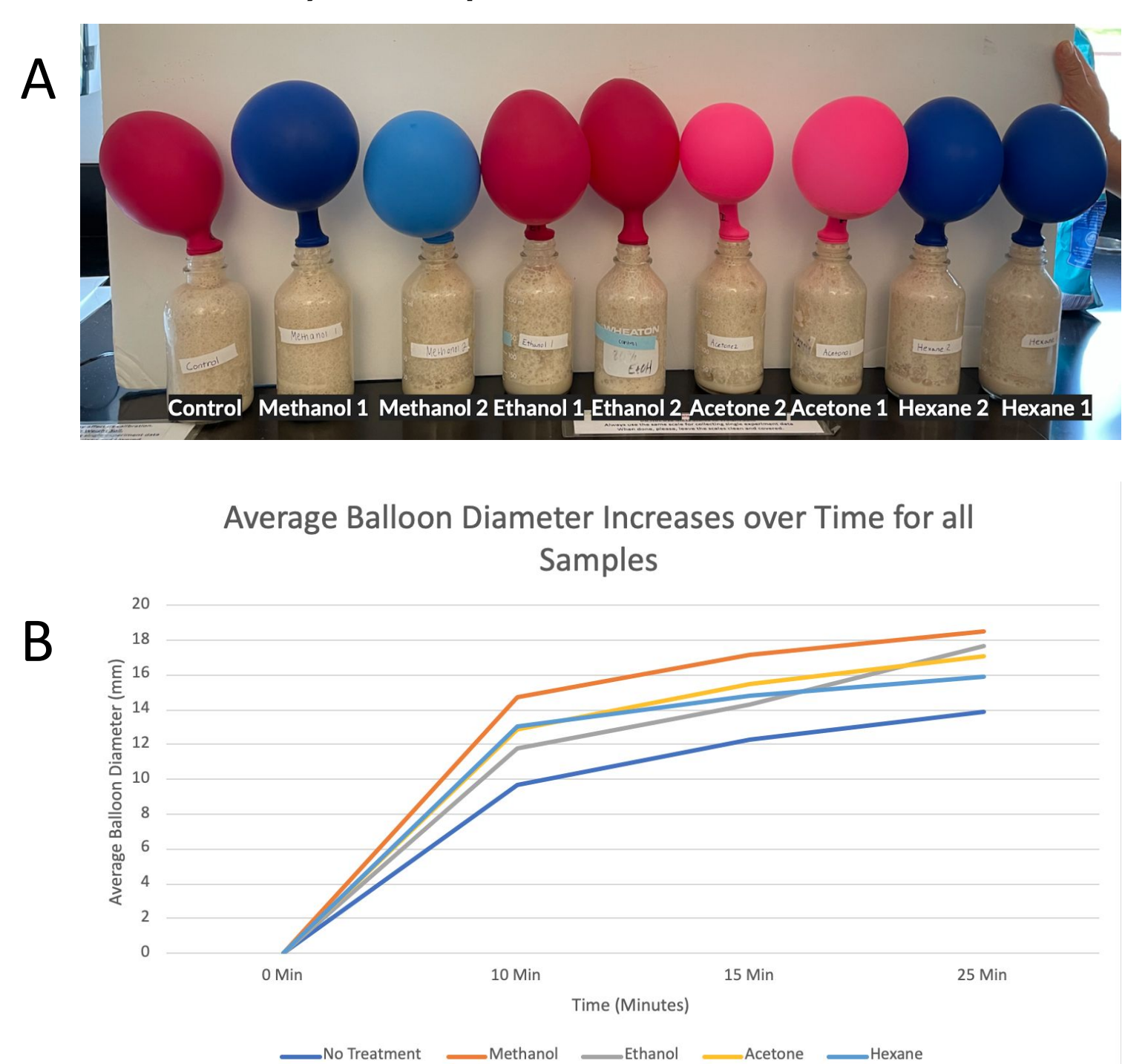


Fig. 2: A: Visual of balloon yeast assay and B: Balloon diameter (mm) increasing over time (minutes)

# *Helichrysum italicum* (curry plant) ethanol extract has greater antimicrobial properties than other solvents

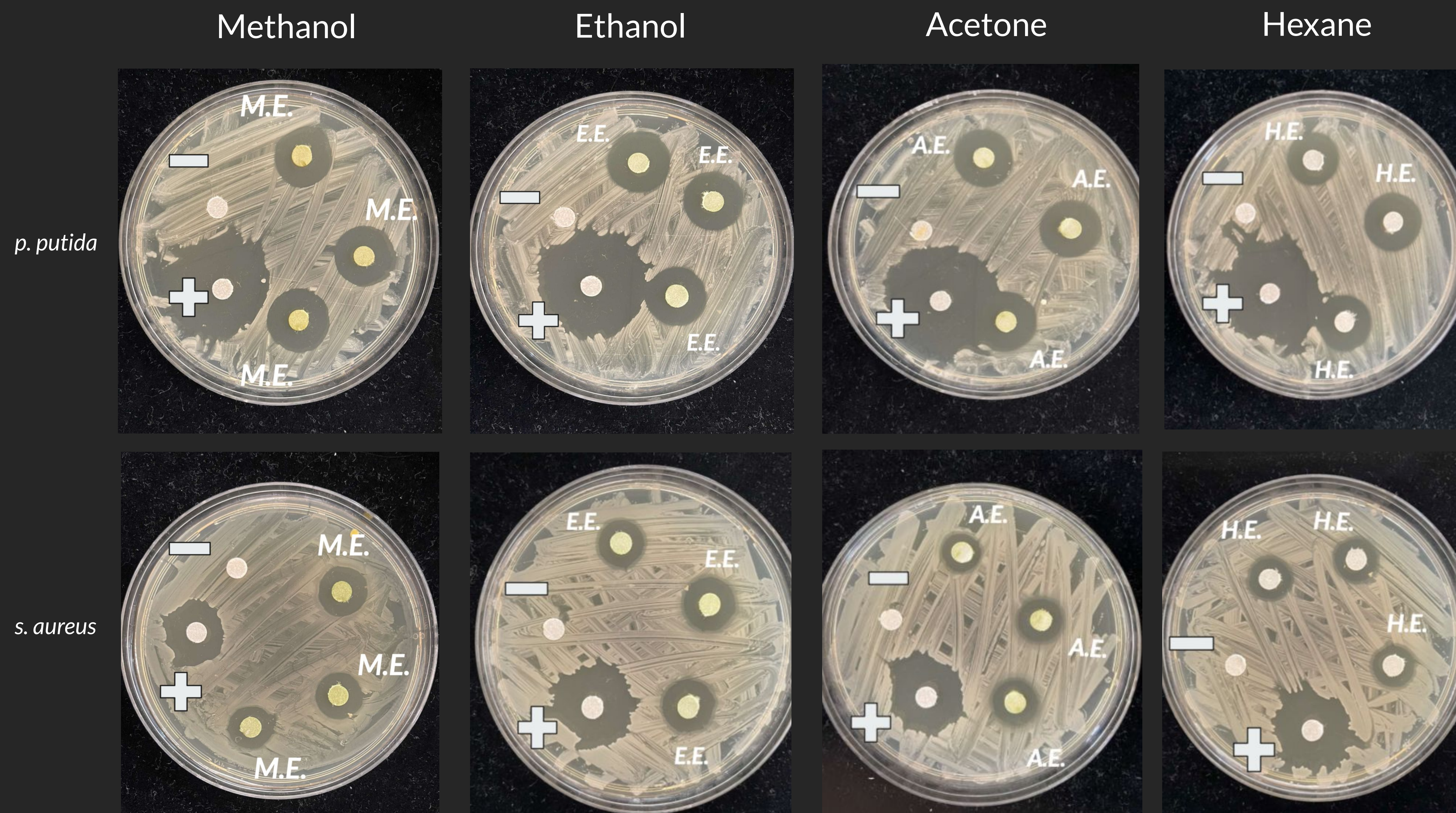


Fig. 3: Result of disk diffusion assays. Methanol is negative control (-), bactine is positive control (+), three replicates of extract per plate.

## DISCUSSION

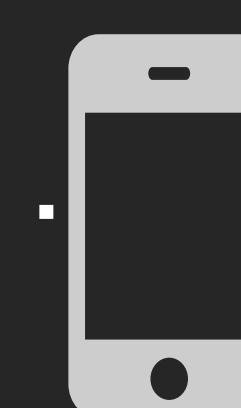
- All extracts showed antimicrobial activity which is supported by other research (Viegas et al., 2014).
- Ethanol was more effective than acetone on *P. putida*
- Ethanol was more effective than acetone + hexane on *S. aureus*
- Balloon assay measured CO<sub>2</sub> output in yeast growth over time
- Antifungal assay successful, however requires increased extract concentration to see inhibition
- *Helichrysum italicum* extracts had no effect on yeast growth when diluted to a 1:10 v/v ratio (Bakkali et al., 2005).
- In the future, plan to add a larger percentage of plant extracts into yeast reactions

## REFERENCES

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Viegas D., Palmeira O. A., Salgueiro L., Martinez O. J., Palmeira O. R. (2014). *Helichrysum italicum*: From traditional use to scientific data. *Journal of Ethnopharmacology*, 151(1), 54-65

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