# The salinity preference of *Caenorhabditis elegans*

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## Introduction

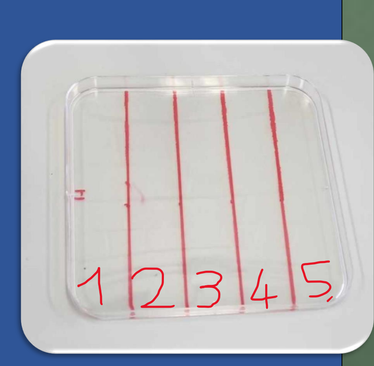
- *C. elegans are* very important in studies ranging from mutation characterisation, host – pathogen coevolution, mating system evolution, …
- Males and hermaphrodites differ in behaviour
- Expect: salt preference for environment in which they were not stressed when raised

## Objective

Characterising behavioural differences among sexes, strains, age and generations using salinity

## Materials & methods

- Worm maintenance and crossing
- Worm synchronisation to obtain many of identical age (reduces behavioural variation)
- Established salt gradients on agar plates



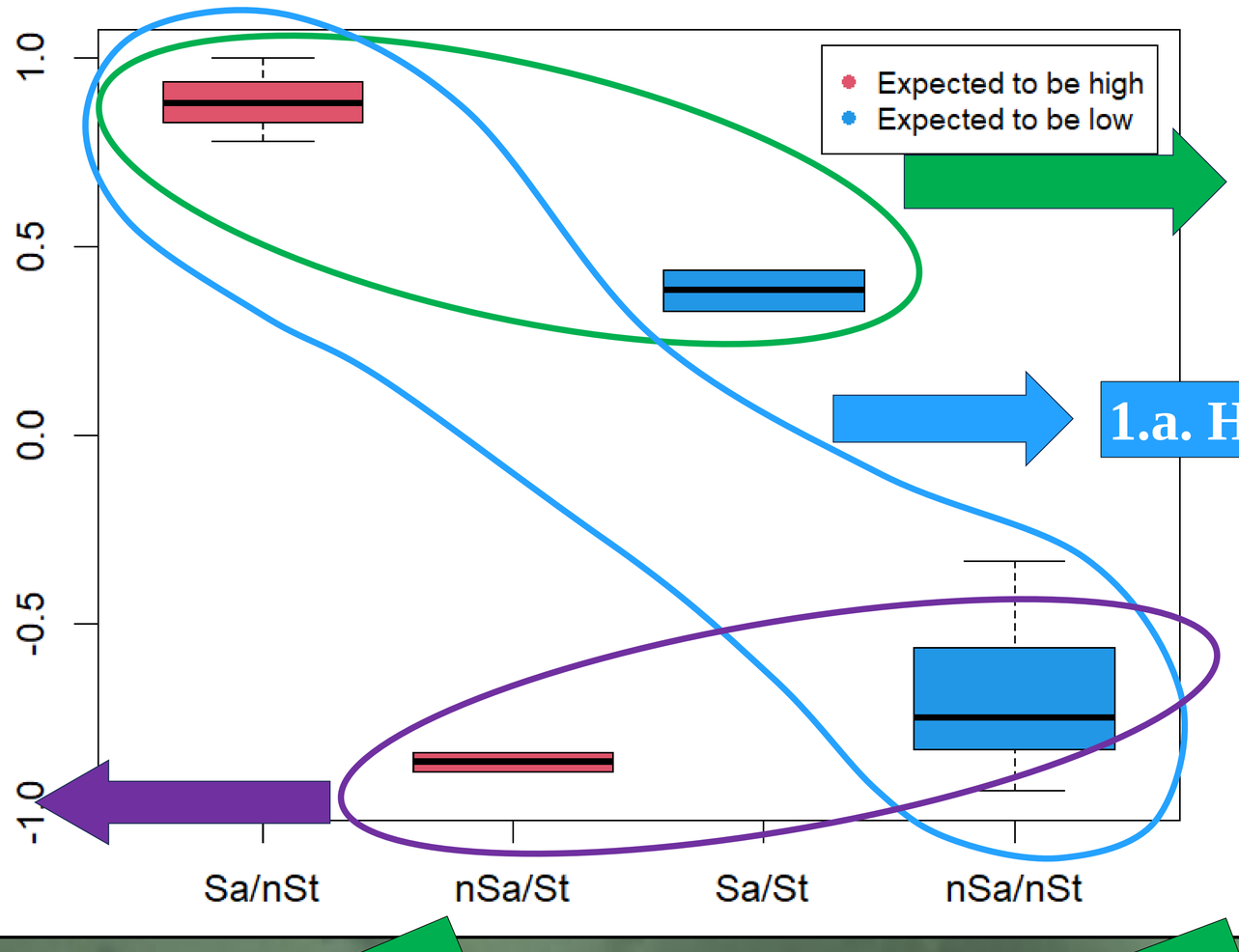

**Protocol:** Worms were grown under l
ow or high salinity in either starved or fed conditions and
placed in the middle of a salinity gradient.
Worms from wild lines, sexes, and crosses between lines were observed forsalt preference.

## Results

### Starved-salinity interaction

- Saltier conditions → positive effect on salinity preference
- High salt → different behaviour when starved
- Low salt → not influenced by starvation

**1. Starvation-salinity interaction**




**1.b. Starved vs not starved (High salinity)**

**1.a. High vs normal salinity**

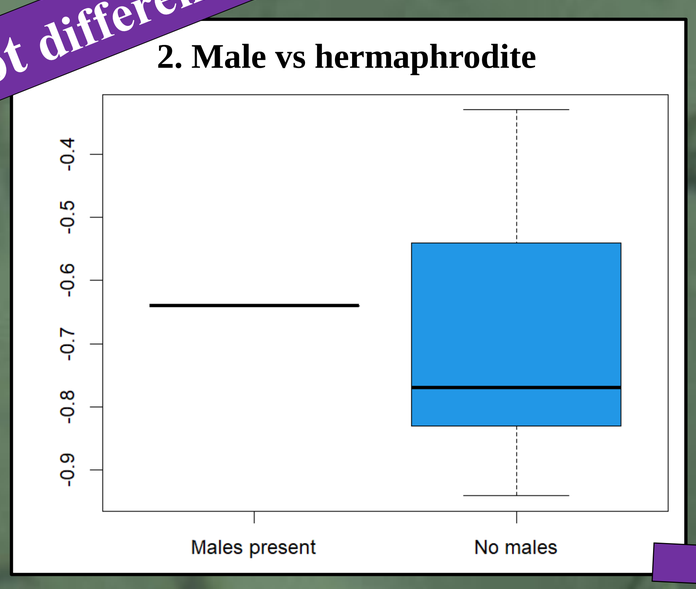
**1.c. Starved vs not starved (Normal salinity)**

**Color legend**

- Confirms literature
- Novel result / to follow up
- No result

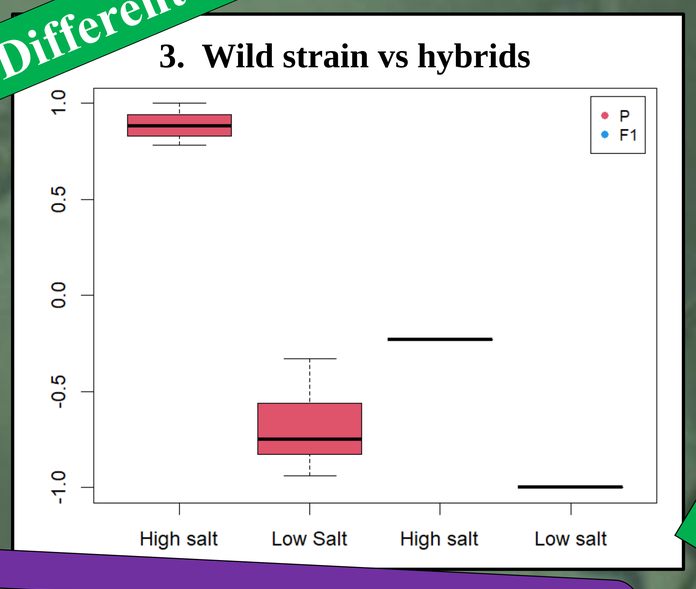
**Not different**

**2. Male vs hermaphrodite**



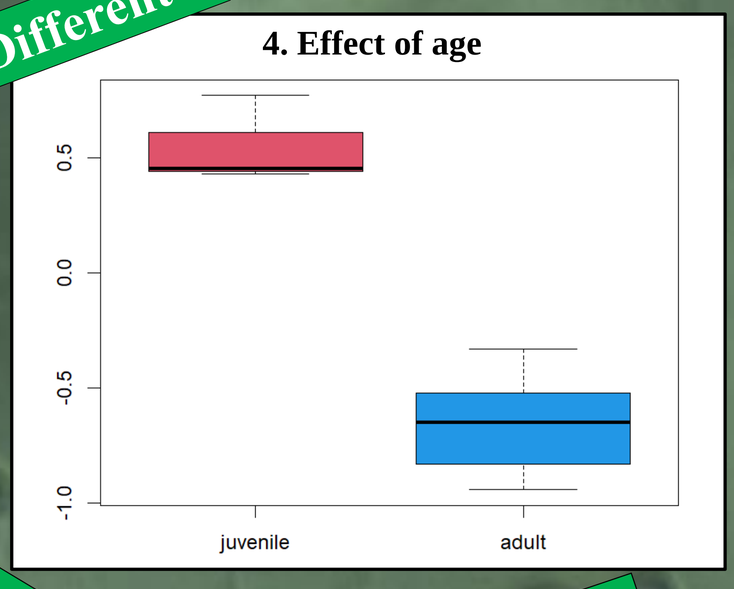

**Different**

**3. Wild strain vs hybrids**




**Different**

**4. Effect of age**




## Conclusion

1.a. Growing worms on high salinity increases their salt preference.

1.b. Starving lowers salt preference on high salinity.

1.c. Starving doesn't affect salt preference on low salinity.

2. Male behaviour was not different → more research needed.

3. $F_1$ was less attracted to salt.

4. Juveniles were more attracted to salt.