E. crypticus as a screening organism for earthworm toxicity testing

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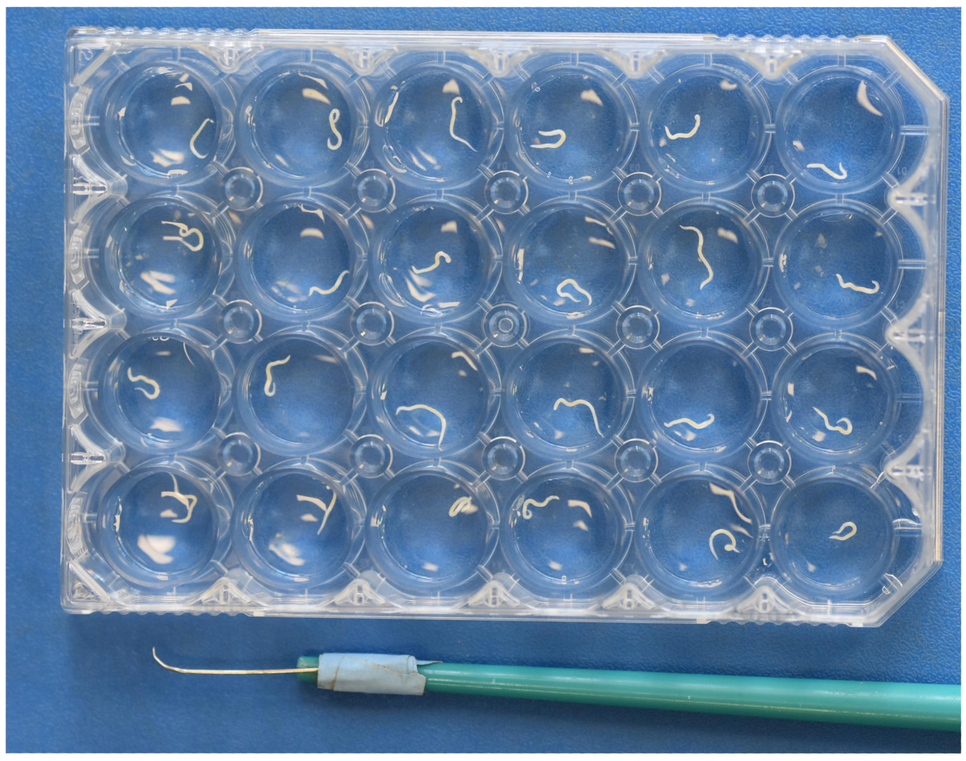
Aims:

- Develop rapid screening test to identify chemicals or mixtures of interest
- Accurate, repeatable results
- Toxicity testing of 13 agrochemicals
- Identify differences in annelid sensitivity for further study

Methods:

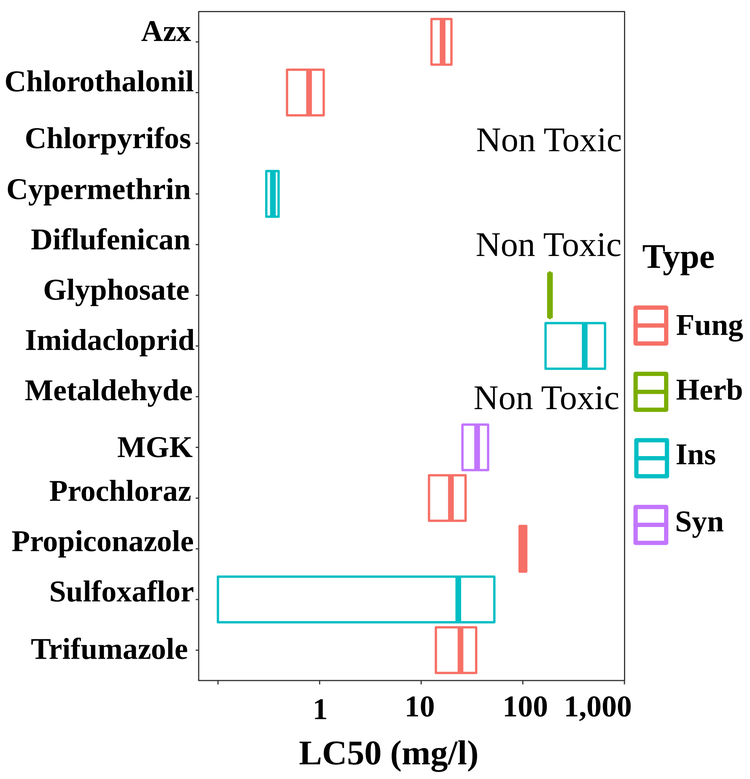
- 96hr aquatic test, 24 well plates
- Artificial pore water from Roembke & Knacker (1989)
- Survival at 6 time points



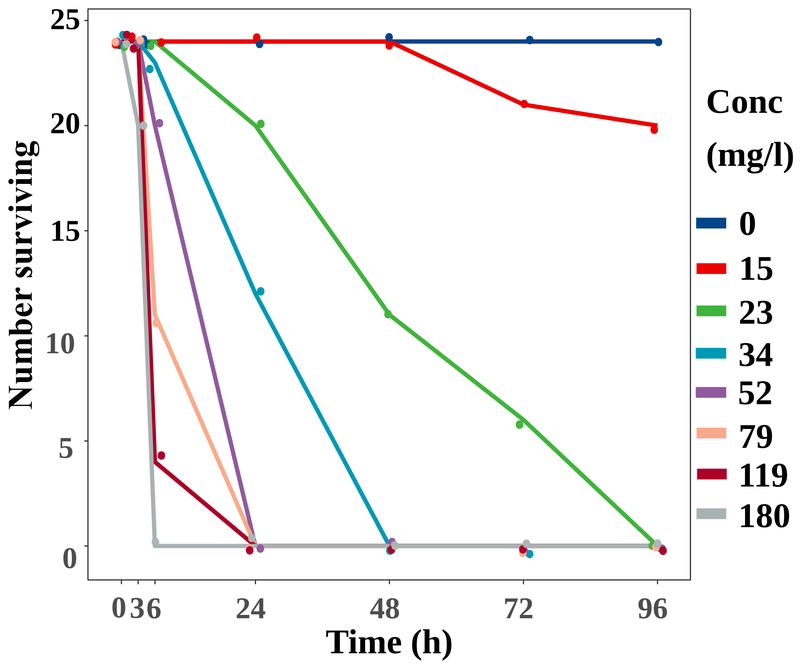
Results:

- High repeatability
- High precision
- High throughput
- Dose response seen above water solubility
- Very sensitive to cypermethrin + chlorothalonil

LC_{50} for different chemicals

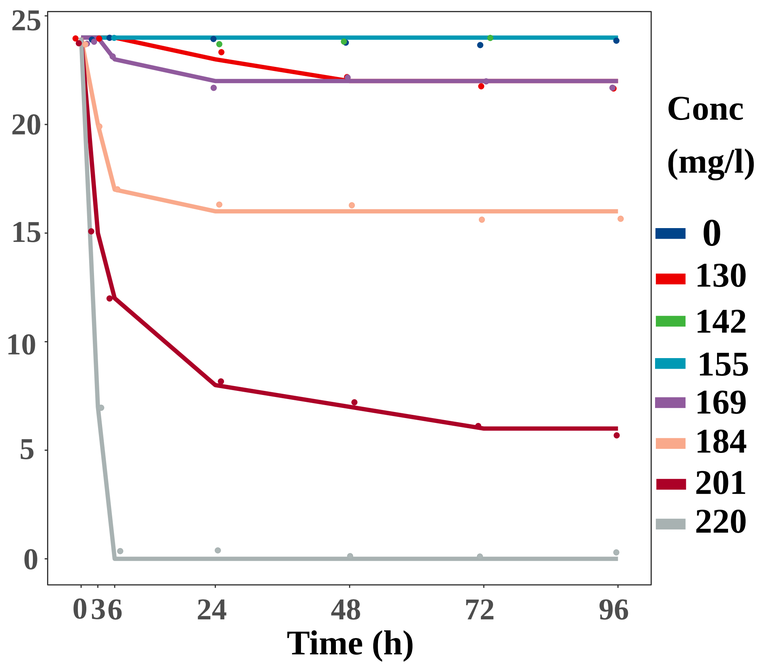


Time = Dose



Prochloraz

Resolves narrow conc range



Glyphosate

Comparison with *L. rubellus*

Chemical	*L. rubellus* LC_{50} (mg/kg)	*E. crypticus* LC_{50} (mg/l)	Ratio
Chlorpyrifos	91	2000	22
Cypermethrin	1056	0.35	0.0003
Imidacloprid	40	407	10.2
Prochloraz	567	19.7	0.035

- *L. rubellus* higher relative sensitivity to chlorpyrifos and imidacloprid
- Investigating TK and genetics reasons for this