

Toxins for Tea...



Maggie Atienza
Hons Candidate
Department of Marine Science
Supervisor: Dr Stephen Wing

How do kelp chemicals affect the food web?

Importance

Healthy kelp forests depend on many hidden links. The food an urchin eats can ripple outward to affect the predators that hunt it and the shellfish that feed on its leftovers, revealing how tightly connected these coastal ecosystems really are.

Phlorotannins are chemicals in kelp that can be toxic and deter grazers!

How is the research done?

Sea urchins are offered artificial diets made from different kelps, containing high or low concentrations of phlorotannins. We observe which diet the urchins prefer to eat.

Spiny rock lobsters are given two sea urchins to eat. One has eaten kelp with high phlorotannin concentrations, and the other, a low phlorotannin diet. We observe which urchin the crayfish chooses to eat.

We measure how green-lipped mussels grow when sea urchins are present and feeding on kelp, compared to when they are not. We record whether the kelp has high or low phlorotannins.



Urchins eat kelp species

Crayfish eat urchins



Mussels feed on leftovers from urchins

