

Dr Kathy Schuller



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Research Interests

- **Biochemistry**
- **Microbiology**
- **Science & Mathematics Education**

Dr Kathy Schuller is a biochemist and microbiologist whose work on functional foods includes investigating and improving the potential health benefits of antioxidants in red wine.

In an aquaculture project being conducted with the Lincoln Marine Centre, Aquafin CRC, CSIRO and Tuna Boat Owners Association, Kathy is also working on understanding the impact of harvest stress and diet on flesh quality and shelf-life of farmed tuna fish.

She is particularly interested in the feasibility of enhancing fish flesh with natural antioxidants from sources such as grape seed, to potentially confer the anti-ageing properties of red wine, as well as improving the stability of health giving omega-3 fatty acids in the fish, thereby producing a new functional food.

Her PhD student Alex Corte has achieved a world first by establishing the first continuous cell line for Southern Blue Fin Tuna, which will allow them to perform several experiments on antioxidant effects in one week which would take years to perform on live fish. For this reason, the cell line could play a key role in improving viral disease diagnosis in fish, and potentially screening broodstock and young fry, to certify them as disease free.

Kathy is also working on phosphorus uptake by plants in the Eyre Peninsula of South Australia with the ultimate aim of improving wheat yields and combating the excessive use of phosphorus fertilizers that is contributing to the pollution and degradation of Australia's scarce water resources.

Current main research projects:

- Improving wheat yields on the Eyre Peninsula of South Australia by unlocking phosphorus from the soil
- Understanding the impact of harvest stress and diet on flesh quality and shelf-life of farmed tuna fish destined for the Japanese sashimi market:
- Cloning, expression, purification and crystallization of thioredoxin peroxidase from the malaria parasite *Plasmodium falciparum*
- Investigating the improving the potential health benefits of antioxidants in red wine

- Conducting multidisciplinary collaborative research on Australia's biodiversity & landscapes
- Providing innovative interpretation of biodiversity research for a wide variety of end-users