B209 A Study on Materials and Methods of Allelopathy Research

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It is important to choose good experiment materials and methods for allelopathy research as well as other one. Two hundred and seventy intra- and international Journals were investigated concerning Allelopathy Research and two Journals, *Plant and Soil* and *Journal of Chemical Ecology*, contained a lot of allelopathy articles. Applied in these Journals, donor plants were 314 taxa, receptor species, 669 taxa. Seed germination, seedling growth, anti-microbial activity, enzyme activity, tissue culture, micromorphology by SEM or TEM, identification of allelochemicals were used to verify allelopathic mechanism by Petri dish, pot, stair-step apparatus and field bioassay.

B210 Phytoplankton Dynamics across the Subantarctic Front

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The subtropical convergence zone (STCZ), subantarctic front and the subantarctic zone between 40°S - 55°S are known to be important global sinks of atmospheric CO_2. As part of the Australian JGOFS effort and the IGAC ACE-1 experiment, we examined plankton community structure during austral early summer of 1995/6. Dominant net phytoplankton species north of 50°S were *Pseudonitzschia* spp. and *Gymnodinium* spp., whereas *Chaetoceros* spp. and *Fragilariopsis kerguelensis* codominated with *Pseudonitzschia* spp. south of 50°S. The biomass of *Chaetoceros* spp. and *Fragilariopsis kerguelensis* increased several-fold south of 50°S. Zooplankton were dominated by non-tintinnid ciliates north of 50°S, and by the non-tintinnids, *Codonellopsis* sp., *Salpingella* sp., and copepods south of 50°S. The maximum cell numbers and biomass of phyto- and zooplankton were observed at 40 m depth north of 50°S, and 60 - 80 m depth south of 50°S.