

PROJECT 4-7 EFFECT OF SEAWATER AND/OR DETERGENTS ON PLANTS

PROBLEM

Plants that grow along the beach can tolerate the salty ocean spray that blows onto their leaves. They may however be severely damaged or killed if any detergent gets into the water. The question is what would happen to your local beach plants if the sea water was polluted with detergent?

INFORMATION

1. The beautiful Norfolk Island Pines around Sydney beaches like Bondi and Marouba were killed as a result of the detergents in sewerage released in the ocean (see account by Pitman, 1977).
2. Plants that grow around river estuaries that go salty in summer could also be investigated.
3. Having observed the effects of an experimental salty spray and which plants are most sensitive you might check out plants near your local ocean sewerage outlet. It is important to know how the sewerage is treated as different treatment methods reduce the amount of detergents that remain.

DESIGN OF EXPERIMENT

1. Will you treat the plants with detergent in straight sea water or diluted sea water? How often will you treat? How will you mark the treated leaves, prevent spray drift, score the damage?
2. What will be your control?
3. Is there any way of measuring the salt the plants get in the field in addition to your experimental sprays?
4. If you use plants in the field make sure you have the owner's permission as you may damage the plants.

REFERENCES

Jones, C. Gadler, S.J. and Engstrom P.H. (1972). Pollution : The Waters of the Earth (Dent : London).

Pitman, M.G. and others (1977). The outfall connection. Australian Natural History 19 (3) 74-8.