E· 28 **BACTERICIDAL AND FUNGICIDAL ACTIVITY OF EXTRACTS FROM THE BROWN SEAWEED *TURBINARIA***

S. Shyamali M. de Silva, Sarath K. T. Gamage, N. Savitri Kumar
(*Department of Chemistry, University of Peradeniya*)

and

Sinnathamby Balasubramaniam
(*Department of Botany, University of Peradeniya*)

There have been many reports of the detection and isolation of biologically active substances from red, brown and green seaweeds. We have previously described the occurrence of bactericidal activity in extracts of the brown seaweed *Stoechospermum marginatum* and the isolation and identification of the active constituent. We now report the occurrence of bactericidal (against *Escherichia coli* and *Staphylococcus aureus*) and fungicidal (against yeast) activity in extracts of the brown seaweeds *Tubinaria ornata* and *T. conoides* collected in Mandativu and Velanai respectively, in the Jaffna district.

The finely chopped seaweeds were extracted sequentially by the slow percolation of methanol and water respectively. The extracted seaweeds were freeze dried and then extracted by the slow percolation of dichloromethane and light petroleum (40–60°) respectively. The methanol extract, the aqueous extract, the dichloromethane extract and the light petroleum extract respectively were concentrated to dryness. The standard disc method was used to test for the presence of bactericidal and fungicidal activity.

The dichloromethane extract from *T. ornata* was separated into three fractions *1*, *2* and *3* (in order of decreasing polarity) by preparative thin layer chromatography. Bactericidal activity against *S. aureus* was observed in all three fractions whereas fungicidal activity was observed only in fraction *2*.

Similarly the dichloromethane extract from *T. conoides* was separated into fractions *1*, *2*, and *3*. Fractions *1* and *2* showed bactericidal activity (*S. aureus*, 13 mm zones) and very strong fungicidal activity (24 and 27 mm zones respectively). The significance of the above zones of inhibition were evaluated by comparison with standard drugs. Trinate sulfur (for *S. aureus*) and Nrstatin (for yeast) showed 50 mm and 27 mm zones of inhibition respectively under identical conditions.

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Table 1 — Biological activity of seaweed extracts

	Methanol			Aqueous			Dichloromethane			Light Petroleum		
	E. coli	*S. aureus*	*Yeast*	*E. coli*	*S. aureus*	*Yeast*	*E. coli*	*S. aureus*	*Yeast*	*E. coli*	*S. aureus*	*Yeast*
T. ornata	—	+	—	—	—	—	—	+	+	+	+	+
T. conoides	O	—	—	O	+	—	+	+	+	+	+	+

\+ inhibits growth of organism.

— no inhibition.

O testing incomplete.