

The seaweeds in the Suez Canal 120 years after its first opening and their potential utilization

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The Suez Canal is considered as one of the most important path ways in the world for commercial trade as well as for the migration of plants and animals between the Red Sea, one of the youngest seas, and the mediterranean, one of the oldest.

The Canal authority is intending now a days to start the second phase of the development which include the widening and deepening of this water body. These changes will affect the distribution of the marine fauna and flora of the Canal and will change its ecological adaptation in many ways.

It is of great importance to speculate the actual status of the Seaweeds, one of the major bases for the nutrition of many groups of animals, before the changes of Canal features.

More than 180 species of seaweeds had been collected from the Canal, 163 km, in the period between 1983-1991. The red algae constitute about 40% of the flora, while the greens was found to be about 30% and the-brown is about 16%. The blue greens complete this list by about 14%. The distributional pattern of these algae along the Suez canal were established as they colonize the canals banks and the Lakes bottoms.

FARGHALY (1985) had divided the Canal into four major parts ; the northern part, the Timsah, the Bitter Lakes and the southern part. Six years latter we can illustrate the seaweed vegetation as follows :

A) The northern part :

About 120 species of seaweeds belonging to the four groups could be collected along the year ; 60% of indopacific origin and about 15% are not reported from the other parts of the Canal. In this part the dominance was for the red algae followed by the green.

B) The Timsah Part :

Investigations were carried out on water quality and growth of seaweeds in five different sites along 20 km in this part, for 14 months during (1985-86) FARGHALY *et al.* (1988), and followed to 1991. These investigations conclude that this part of the Canal play a negative role in the migration of the Red Sea species of algae to the north. The hydrographic conditions caused by the large amount of drainage water from the adjacent lands is the barrier for such migration. About 80 species had been identified in this part ; 46% red, 28% green, 15% brown and 11% blue green.

C) The Bitter lakes :

The Bitter lakes plays a reservoir role for the migration of Seaweeds from the Red Sea to the north. Extensive collections made all over the lakes banks and the hydrographic conditions were recorded during two years (1988-1989). These studies gave a distributional pattern of about 110 species of Seaweeds ; 50% red, 28% green, 16% brown and 6% blue green.

The electric power plant of Abu Sultan in the northeast of the great Bitter Lake raise the water temperature of about 9°C which could be the attraction power for many species found for the first time in the Canal in this study.

D) The Southern part :

This part do not differ greatly than the northern part of the gulf of Suez in the percentage of the groups ; 45% red, 25% green, 15% brown and 15% blue green. About 100 species had been collected from this part.

The seaweeds of the Suez Canal colonize any hard substrate in four major belts :

1) The first belt at high water level of blue greens associated with Diatoms. Some filamentous green algae was found occasionally in summer.

2) The second belt below the high water mark extended to about 30 cm. This belt is composed mainly of green algae with small red ones. Epiphytes could be found in some parts of the Canal.

3) The third belt start about 40 cm below the low water mark and extend to 40-60 cm where macro-red algal communities has well developed growth. In some parts of the Canal brown associate with red algae.

4) The fourth belt start at 100 cm depth and include red algal communities. This belt is variable according to the stations.

These observations agrees with and complete ALEEM's (1983).

A large number of these algae are know to be of economic importance and containing natural products of economic value. Other species reported to be pollutions monitors. During the ecological studies to understand the distributional patterns of the flora, the potential utilization of the important species were estimated.

Some species of red Brown and Green algae had been used as minors of the sandy Sinai desert soil. Three crops were tested using this minor. The results proved that seaweeds could be good minors for sandy soil to grow the most popular leguminous in Egypt, broad beans.

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