

ESTUARINE ALGAE → BIO-ETHANOL

Energy and Wetland Research Group, Centre for Ecological Sciences, Indian Institute of Science, Bangalore 560012
 Web: <http://wgbis.ces.iisc.ernet.in/energy/>, <http://ces.iisc.ernet.in/biodiversity>

- Marine macroalgae, or Seaweeds, are plant-like organisms that generally live attached to rock or other hard substrata in coastal areas.
- They are classified into three different groups:
 - Green algae (phylum Chlorophyta).
 - Red algae (phylum Rhodophyta).
 - Brown algae (phylum Ochrophyta)
- The amount of bioethanol obtained is based on the carbohydrate (fermentable sugars) present in the seaweeds.

BIO-CHEMICAL COMPOSITION OF SEAWEEEDS*

Seaweeds Species	Carbohydrate(%)	Protein(%)	Lipid (%)
<i>Enteromorpha intestinalis</i>	23.84	16.38	1.33
<i>Ulva lactuca</i>	44.44	18.26	1.6
<i>Enteromorpha clathrata</i>	23-24	12	4.6
<i>Codium tomentosum</i>	20.47	6.13	2.53
<i>Padina gymnospora</i>	21.88	17.08	1.4
<i>Saragassum tenerium</i>	23.55	12.42	1.46
<i>Saragassum wightii</i>	23.5	11-11.5	2.33
<i>Turbinaria conoides</i>	23.9	12-12.5	2
<i>Gracillaria folifera</i>	22.32	6.98	3.23
<i>Gelidium amansii</i>	34.6	18.5	0.6

*Values based on the Literature review

CONVERSION PROCESS: SEAWEED SUGARS TO BIO-ETHANOL



Bhargavi R Sharma, Deepthi Hebbale, Chandran M. D. S. & Ramachandra T. V.
 Energy and Wetland Research Group,
 Centre for Ecological Sciences,
 Indian Institute of Science, Bangalore 560012
 Email: cestvr@ces.iisc.ernet.in, Phone: 080 22933099