

# SarGOSEm

It's not just for Breakfast Anymore

2015 Gulf Coast Sargassum Symposium

Int Children's Book Day, MMXV

Greg Whittaker

# So a guy walks into a bar with a bucket of seaweed...



If there's one sentiment that's constantly repeated among craft beer drinkers it is, "This beer is good but it needs more seaweed!" If we've heard it once, we've heard it a thousand times. Well folks, message received. Tofino Brewing Company presents to you the Kelp Stout. A dark, rich, full-bodied ale brewed with locally harvested Kelp, giving a unique, umami-type quality to this complex beer.



## PRODUCTION OF IODIZED *SACCHAROMYCES CEREVISIAE* EDIBLE YEAST USING BROWN SEAWEEDS *SARGASSUM* SP EXTRACT MEDIA BY SUBMERGED FERMENTATION

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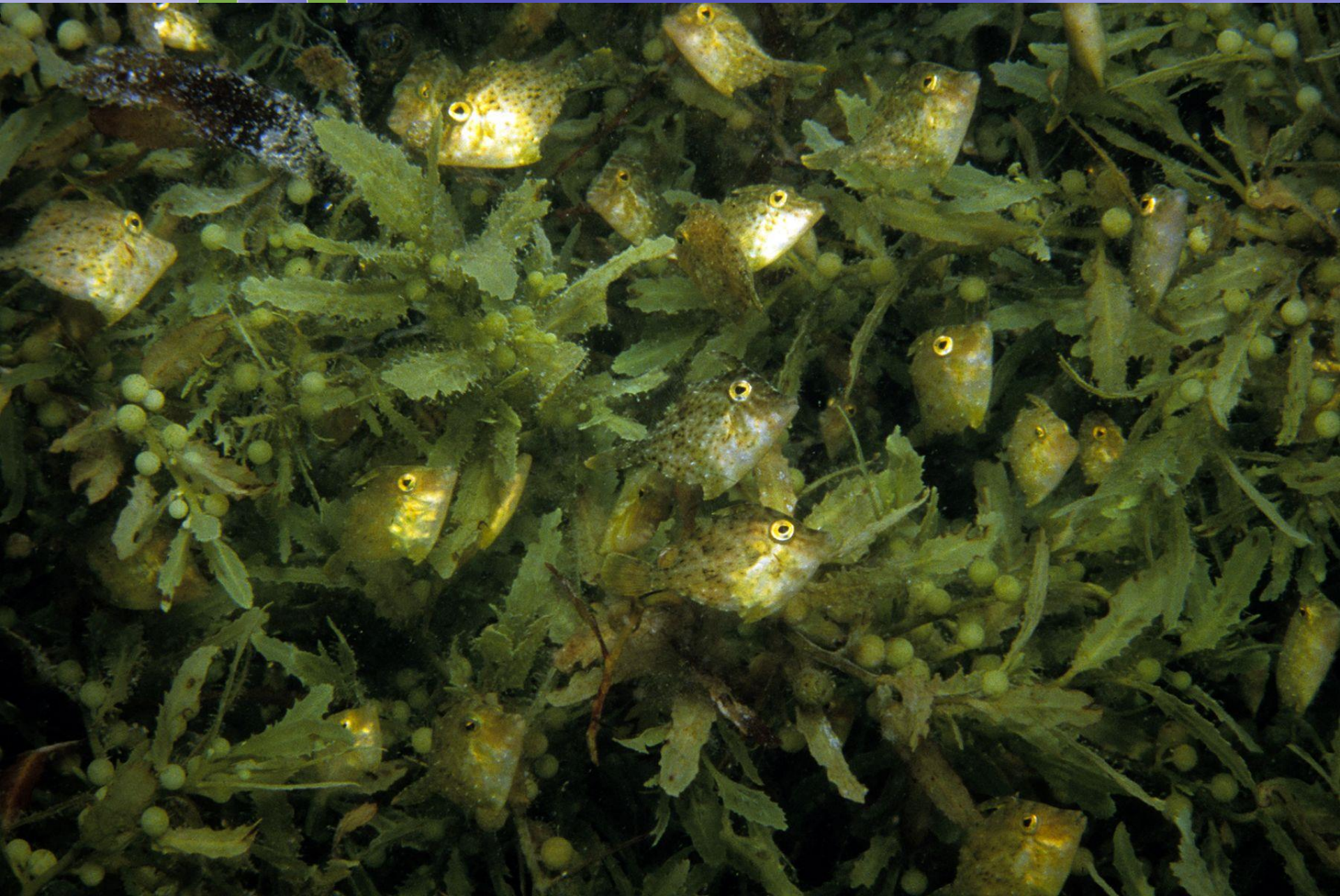
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### ABSTRACT

Brown seaweeds such as *Sargassum* are very rich in iodine, currently discarded as waste material leading to environmental pollution along Indian coasts of Tanzania. The ability of *Saccharomyces cerevisiae* edible yeasts isolated from mangrove sediment to absorb iodine from *Sargassum* extract was investigated and analyzed by standard iodine determination method. The effect of boiling *Sargassum* extracts as growth media for yeasts during submerged culture fermentation was determined by monitoring yeast growth on the media by using spectrophotometer. Results demonstrated the ability of *Saccharomyces cerevisiae* edible yeasts to bio-extract iodine from *Sargassum* brown seaweeds extract. The yeast cells biomass from non-boiled *Sargassum* extract recorded the highest concentration of (0.06 mg/l) followed by yeasts from boiled extracts (0.03 mg/l) and the lowest (0.02 mg/l) was recorded from yeasts grown in aquatic yeasts broth. This is the first feasibility study on production of iodized edible yeast *Saccharomyces cerevisiae* on Tanzanian *Sargassum* seaweeds. Therefore, production of iodized edible yeast could in future help alleviate the iodine deficiency problem through inclusion as dietary supplement. However, such unexploited potential needs further research on optimization of fermentation parameters, supplement formulation and biosafety issues such as dosage.

**KEYWORDS:** *Sargassum*, iodized edible yeast, submerged fermentation, brown seaweeds

# The plan...



# The recipe...

Beergassum - version 1.0 was an excellent (in my humble opinion) west coast style IPA. However, there was no discernible "seaweed" character so we went back to the drawing board.

Gose is a top-fermented beer that originated in Goslar, Germany. It is brewed with at least 50% of the grain bill being malted wheat.

Dominant flavours in Gose include a lemon tartness, a herbal characteristic, and a strong saltiness (the result of either local water sources or added salt). Gose beers typically do not have prominent hop bitterness, flavours, or aroma. The beers typically have a moderate alcohol content of 4 to 5% ABV.

Because of the use of coriander and salt, Gose does not comply with the Reinheitsgebot. It is allowed an exemption on the grounds of being a regional specialty. It acquires its characteristic sourness through inoculation with lactic acid bacteria after the boil.<sup>[1]</sup>

Gose belongs to the same family of sour wheat beers which were once brewed across Northern Germany and the Low Countries. Other beers of this family are Belgian Witbier, Berliner Weisse, Broyhan, Grätzer.



## SargOSEm

OG = 1.044 FG = 1.004

IBU = 12 ABV = 4.7%

### Ingredients:

- 4.0 # Wheat liquid malt extract
- 2.4 # Pilsner liquid malt extract
- 2.0# Honey malt
- 3.0 # acidulated malt (2 °L)
- 1 oz Hersbrucker hops (60 min.)
- 1 Whirlfloc® tablet (15 min.)
- 3 qts *Sargassum* tea (3# steamed 40 minutes.)
- 1 oz ground coriander seed (10 min.)
- 1.5 Tbsp sea salt (10 min.)
- White Labs WLP029 German Ale/Kölsch Yeast