

**NATIONAL BIORESOURCE DEVELOPMENT BOARD**

Dept. of Biotechnology  
Government of India, New Delhi

For office use:

**MARINE BIORESOURCES**

FORMS DATA ENTRY: Form- 1(general) Ref. No.:  
(please answer only relevant fields; add additional fields if you require)

Fauna :	Flora	√ Microorganisms
General Category : Eukaryota , Fungi , Ascomycota , (Ascosporeogenous yeast)		
Scientific name & Authority: <i>Saccharomyces cerevisiae</i> Meyen ex -Hansen (1883) Common Name ( if available) : Baker 's yeast Synonyms: <i>Zygosaccharomyces paradoxus</i> (Batschinskaya) Klocker (1824) <i>Candia robusta</i> Diddens et Lodder (1942) <i>Saccharomyces gaditensis</i> Santa Maria (1970) Author( s) : Same as given in the synonym. Status Ref. <b>The Yeast</b> ed. III (1984)		
Classification: Phylum: Ascomycota Sub- Phylum: Saccharomycotina Super class Class: Saccharomycetes Sub- Class Super Order: Order: Saccharomycetales Super Family Family: Saccharomycetaceae Sub-Family Genus: <i>Saccharomyces</i> Species: <i>cerevisiae</i> Authority: Reference No. <b>J. Ind. Microbiol. 14 (6), 523-530 (1995)</b>		
Geographical Location: Latitude: Place: Arabian sea, Andaman sea, and Cochin backwaters. (Isolated from water samples at 5-100m depth) Longitude: State: EEZ of Indian Coast.		

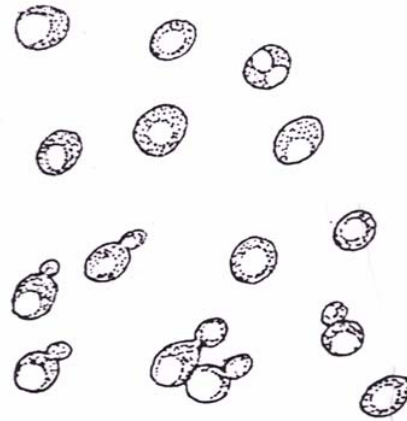
Environment

Fresh water : Yes/ No  
Brackish : Yes/ No  
Salt water : Yes/ No

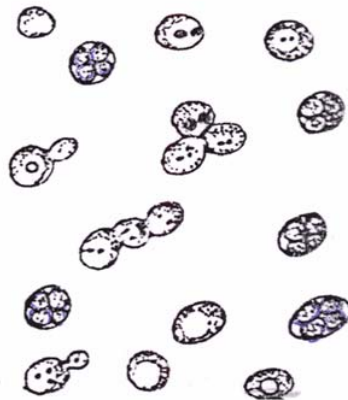
Habitat :  
Migrations :  
Depth range :

Salinity :  
Temperature :

Picture (scanned images or photographs of adult / larval stages )



*Sacch. cerevisiae*  
3 days on Malt extract  
Budding cells



*Sacch. cerevisiae*  
15 days on Gorodkova agar  
ascospores inside the cells

DATA ENTRY FORM: Form- 2(Fish / shellfish / others )  
(please answer only relevant fields ; add additional fields if you require)  
Form –1 Ref.No.:

#### IMPORTANCE

Landing statistics (t/y) : from \_\_\_\_\_ to \_\_\_\_\_ Place : \_\_\_\_\_ Ref. No.: \_\_\_\_\_  
Main source of landing : Yes/ No \_\_\_\_\_ Coast: east/ west \_\_\_\_\_  
Importance to fisheries : \_\_\_\_\_  
Main catching method : \_\_\_\_\_  
Used for aquaculture :yes/ never/ rarely \_\_\_\_\_  
Used as bait: yes/no/ occasionally \_\_\_\_\_  
Aquarium fish :yes/ no/ rarely \_\_\_\_\_  
Game fish : yes/ no \_\_\_\_\_  
Dangerous fish :poisonous/ harmful/ harmless \_\_\_\_\_  
Bioactivity : locally known/ reported/ not known \_\_\_\_\_ Details: \_\_\_\_\_  
Period of availability: Throughout the year – yes/ no \_\_\_\_\_ If no, months: \_\_\_\_\_

#### SALIENT FEATURES :

Morphological:

##### **Standard Description of *Saccharomyces cerevisiae*:**

**Growth in Malt extract:** After 3 days at 25°C the cells may be globose or subglobose (5.0 – 10.0) X (5.0 - 12.0)  $\mu$  m, ellipsoidal to cylindrical (3.0 – 9.5) X (4.5 – 21.0) $\mu$ m, elongated cells of more than 30 $\mu$ m in length may be present, single in pairs, short chains or clusters. Sediment and occasionally a ring are present. After one month at 20°C a sediment is present, sometimes also a ring and a film.

**Growth on Malt agar:** After one month at 20°C the streak culture is butyrous, cream to slightly brownish, slightly raised and smooth with light striations or raised and folded, often sectoried, glossy or dull.

**Slide cultures on Corn Meal and Morphology agar:** Pseudohyphae may be formed , they may be rudimentary or well branched.

**Formation of ascospores:** Vegetative cells are transformed directly into asci containing one to four, occasionally more, globose to short ellipsoidal ascospores.

Acetate agar was the best medium for inducing sporulation.

Diagnostic characteristics: -

a) Biochemical

**Fermentation:-**

Glucose	+	Maltose	v
Galactose	v	Lactose	-
Sucrose	v		

**Assimilation of carbon compounds**

Galactose	v	Raffinose	v	Erythritol	-
Sucrose	v	Soluble starch	v	Ribitol	-
Maltose	v	D-Xylose	-	D-Mannitol	v
Cellobiose	-	L-Arabinose	-	Succinic acid	- or +s
Trehalose	v	D-Ribose	-	Citric acid	-
Lactose	-	L-Rhamnose	-	Inositol	-

**Assimilation of nitrate:** -

**Assimilation of ethylamine .HCl :** -

**Assimilation of cadaverine. 2HCl :** -

**Growth in vitamin - free medium:** v

**Growth on 50%(w/w) glucose – yeast extract agar:** v

**Growth at 37 °C :** v

**Growth in presence of 100 ppm of cycloheximide :** -

**G+C:** 38.5–41.0 mol. %

Ref. *The Yeast* ed. III (1984)

rRNA sequence

```
1 aaaccaaccg ggattgcctt agtaacggcg agtgaagcgg caaaagctca aatttgaat
61 ctggtacctt cggtgcccga gttgtaattt ggagagggca actttggggc cgttccttgt
121 ctatgttcct tgaacagga cgtcatagag ggtgagaatc ccgtgtggcg aggagtgcgg
181 ttctttgtaa agtgccttcg aagagtcgag ttgtttggga atgcagctct aagtgggtgg
241 taaattccat ctaaagctaa atattggcga gagaccgata gcgaacaagt acagtgatgg
301 aaagatgaaa agaactttga aaagagagtg aaaaagtacg tgaaattggt gaaaggaag
361 ggcatttgat cagacatggt gttttgtgcc ctctgctcct tgtggtagg ggaatctcgc
421 atttctactgg gccagcatca gttttggtgg caggataaat ccataggaat gtagcttggc
481 tcggtaagta ttatagcctg tgggaatact gccagctggg actgaggact gcgacgtaag
541 tcaaggatgc tggcataatg gttatatgcc gc
```

<http://</entrez/viewer.fcgi?val=1174215&itemID=1&view=gbwithparts>1..>572>  
/product = " 26S ribosomal RNA

Sex attributes:

Descriptive characters:

Meristic characteristics :

Feeding habit:

Main food :

Feeding type :

Additional remarks :

Size and age :

Maximum length (cm) (male / female/ unsexed )

Ref. No.:

Average length (cm) (male / female / unsexed )

Ref. No.:

Maximum weight : (g) (male / female / unsexed )

Ref.No.:

Average weight :(g) (male / female / unsexed )

Ref No.:

Longevity (y) (wild) : (captivity )

Ref. No.:

Length / weight relationships:

Eggs and larvae: Characteristics: Abundance:	Ref. No.:
Biochemical aspects: Proximate analysis: moisture/ fat/ protein/ carbohydrate/ash Electrophoresis:	Ref. No. Ref. No.
<b>SPAWNING INFORMATION:</b>	
Locality: Season: Fecundity: Comment:	Main Ref:
<b>MAJOR PUBLICATIONS (INDIAN):</b> (include review articles, monographs, books etc.) <ol style="list-style-type: none"> <li>1. In the Proceedings of 1<sup>st</sup> Workshop on Scientific Results of FORV Sagar Sampada, 1990.</li> <li>2. Ph.D.Thesis of N.Prabhakaran (CUSAT, Kochi)</li> </ol> <b>LIST OF INDIAN EXPERTS</b> (Name, address, phone, fax, e-mail etc.) <ol style="list-style-type: none"> <li>1.Dr (Mrs) Ranu Gupta, NIO,RC, PBox.1616, Kochi 682014. e-mail <a href="mailto:drngupta@rediffmail.com">drngupta@rediffmail.com</a> Res.Ph.0484 2538067</li> <li>2 Dr.G.S.Prasad, IMTECH,Chandigarh.</li> </ol> <b>ACKNOWLEDGMENT:</b> (List of persons who contributed, modified or checked information) Assisted by Project Assistant, Mrs.Maria Honey.	