

**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 (Ascosporegenous yeast)		
Scientific name & Authority: <i>Debaryomyces marama</i> di Menna (1954) Common Name ( if available) :		
Synonyms: <i>Pichia marama</i> (di Menna) Phaff (1956) <i>Zymodebaryomyces marama</i> (di Menna) Novak et Zsolt (1961)		
Author( s): As stated after the names.		Status
Classification:		
Phylum: Ascomycota		Sub- Phylum: Saccharomycotina
Super class		Class: Saccharomycetes
Sub- Class		
Super Order:		Order: Saccharomycetales
Super Family: Saccharomycetoideae		Family: Saccharomycetaceae
Sub-Family		
Genus: <i>Debaryomyces</i>		Species: <i>marama</i>
Authority: Reference No. <b>The Yeasts</b> ed. III (1984)		
Geographical Location:		
Latitude:	Place: Off Cochin Backwaters, Barmouth. (Isolated from water samples at 20 m depth)	
Longitude:	State: Kerala , EEZ of Indian coast	

Environment

Fresh water : Yes/ No

Habitat :

Salinity :

Brackish : Yes/ No

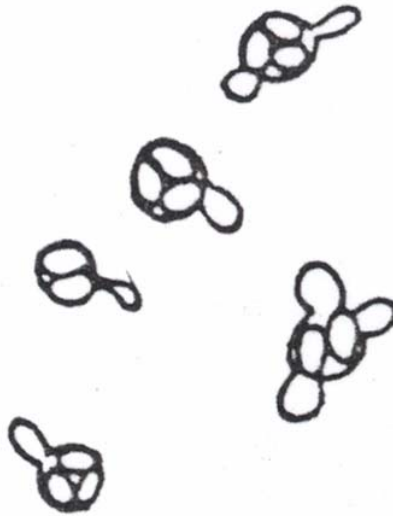
Migrations :

Temperature :

Salt water : Yes/ No

Depth range :

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



*Deb. marama*  
8 days on V8 agar  
Ascospores inside the cells

Ref: The Yeast ed II (1970)

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 *Debaryomyces marama***

**Growth in Malt extract:** After two days at 25°C, the cells are spherical to short-oval to oval, (2 – 4) X (3.5 – 9)  $\mu$  m; single, in pairs or in chains. A sediment, a ring and occasionally a thin dull pellicle are formed. After one month at 17 °C a sediment, a ring and occasionally a complete pellicle are present.

**Growth on Malt agar:** After one month at 17°C streak culture is yellowish-white, soft, shiny to dull, and smooth.

**Slide cultures on Potato-and Corn Meal agar:** No pseudomycelium is formed. Short chains of cells may be present.

**Formation of Ascospores:** Conjugation between mother cell and bud precedes ascus formation. The spores are oval and in scanning micrographs having spiral ridges (Kurtzman et.al; 1975).Under the light microscope they may have smooth appearance. Usually two, but there can be one to four spores formed per ascus. The presence of many spores gives the culture a brown color.

Spores were observed on V8 agar at 20°C and in old Malt agar cultures.

Diagnostic characteristics: -

a) Biochemical

**Fermentation:-**

Glucose	+vw or -	Maltose	-
Galactose	-	Lactose	-
Sucrose	-		

**Assimilation of carbon compounds**

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

**Splitting of arbutin: +**

**Assimilation of nitrate: -**

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

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

**Growth at 37 °C : -**

**G+C: 39.1 mol. %**

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

rRNA sequence

/product="26S ribosomal RNA"

Sequence 577 BP; 161 A; 102 C; 114 G; 200 T; 0 other;

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tgcggaagga tcattacagt attctttttg ccagcgccta attgcgcggc gaaaaaacct      60
tacacacagt gttttttggtt attacaagaa cttttgcttt ggtctggact agaaatagtt      120
tgggccagag acttactgaa ctaaaactca atatttataat tgaattgta tttatttaat      180
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tctcgcatcg atgaagaacg cagcgaatg cgataagtaa tatgaattgc agattccgt      300
gaatcatcga atctttgaac gcacattgcg ccctctggta ttccagaggg catgcctgtt      360
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aggcgtttgc ttgaaatgta ttggcatgag tggactgga tagtgctata tgactttcaa      480
tgtattaggt ttatccaact cgttgaatag tttaatggta tatttcctgg tattctaggg      540
tcggccttac aatacaaca acaagtttga cctcaaa      577
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( FT [rRNA <wgetz?-e+-id+6lScs1MWq1Z+\[EMBL features-id:AB053102\\_6\]>567..>577](#))

Sex attributes:

Descriptive characters:

Meristic characteristics :

Feeding habit:

Main food :

Feeding type :

Additional remarks :

*Debaryomyces marama* is the only *Debaryomyces* with special ridges on the spore wall. In the other species spores wall have warts.

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.) Ph.D. Thesis of N.Prabhakaran 1990 (CUSAT, Kochi)	
<b>LIST OF INDIAN EXPERTS(Name, address, phone, fax, e-mail etc.)</b>	
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