NATIONAL BIORESOURCE DEVELOPMENT BOARD
Dept. of Biotechnology
Government of India, New Delhi

For office use:

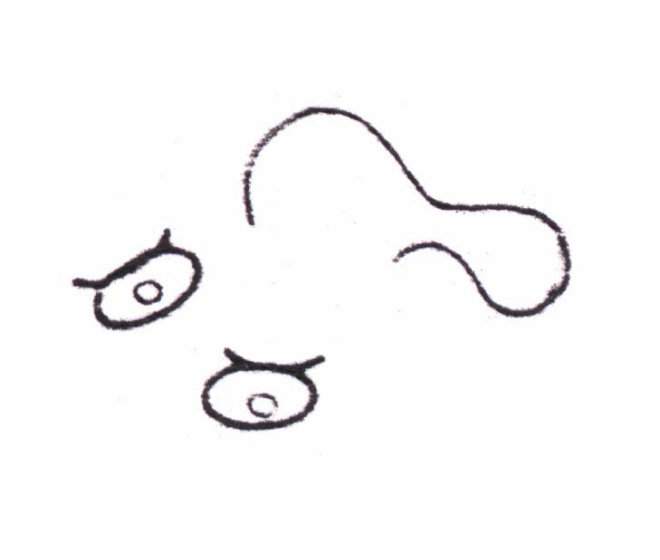
MARINE BIORESOURCES
FORMS DATA ENTRY**:** Form- 1(general **)** Ref. No.:
(please answer only relevant fields; add additional fields if you require)

Fauna : Flora √ Microorganisms
General Category : Eukaryota , Fungi, Ascomycota (Ascosporogenous yeast)
Scientific name &Authority: *Pichia kluyveri* Bedford ex Kudriavzev (1960) Common Name (if available) : Synonyms: *Hansenula kluyveri* (Bradford) Kurdiavzev (1960) Author(s): Same as given in synonyms. Status Ref. **The Yeast** ed. III (1984)
Classification: Phylum: Ascomycota Sub- Phyllum: Saccharomycotina Super class Class: Saccharomycetes Sub- Class Super Order: Order: Saccharomycetales Super Family Family: Saccharomycetaceae Sub-Family Genus: *Pichia* Species: *kluyveri* Authority: Reference No. **Antonie Van Leeuwenhoek 73(4):331-371(1998).**
Geographical Location: Latitude: Place: Arabian sea, Cochin backwaters and Bay of Bengal. (Isolated from water samples 1-10m depth and benthic soil samples Longitude: State: 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)



P. kluyveri
1 week on Malt extract agar
Hat shaped liberated ascospores

Ref: Ranu Gupta (unpublished work)

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 discription of *Pichia kluyveri*:
Growth on 5% Malt extract agar: After 3 days at 25°C, the cells are ovoidal to elongate (2.0 – 5.0) X (4.0 –11.0) μm, and occur singly, in pairs, or in short chains. Growth Is yellowish-tan, dull and with fine wrinkles.
Growth on the surface of Assimilation media: Dry, climbing pellicles are formed.
Dalmau plate culture on Morphology agar: After 7 days at 25°C, growth under the cover glass shows moderately well branched pseudohyphae, but they produce few blastospores. True hyphae are not formed. Aerobic growth is tannish-white, dull, sometimes almost powdery, and with fine striations radiating from center to colony edge. Margins are entire to finely serrate.
Formation of Ascospores: Two to four hat-shaped spores are produced in each ascus, and they are released very soon after formation. Single spore isolates from four- spored asci gave sporogenous colonies suggesting the species to be homothallic.
Spores were observed on acetate agar.

Diagnostic characteristics: -

a) Biochemical

Fermentation:-

Glucose	+	Maltose	-	Trehalose	-
Galactose	-	Lactose	-		
Sucrose	-	Raffinose	-		

Assimilation of carbon compounds

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

Additional carbon compound tested: L- Sorbose -, melibiose -, melizitose -, inulin -, D- arabinose -, D-glucoseamine. HCl +, glucitol -, α-methyl-D-glucoside -, salicin -, potassium D- gluconate -, DL- lactic acid + or w.

Assimilation of nitrate: -

Growth in vitamin - free medium: -

Growth on 10%sodium chloride plus 5% glucose in yeast nitrogen base: +

Growth at 37 °C : +

G+C: 28.3 - 28.5 mol. %

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

b) r RNA sequence

SQ Sequence 568 BP; 135 A; 113 C; 183 G; 136 T; 1 other;

```
    aaaccaacag ggattgcctc agtagcggcg agtgaagcgg caagagctca gatttgaaat      60
    ctcacctagt gtgcgagttg taaattgcag gttggagtct cgggttagac gtgtgtgcaa     120
    gtcccttgga acagggtgcc actgagggtg agagccccgt ancgtgcatg tcgacacctg     180
    tgaggccctt ctgacgagtc gagttgtttg ggaatgcagc tctaagtggg tggtaaattc     240
    catctaaggc taaatattgg cgagagaccg atagcgaaca agtactgtga aggaaagatg     300
    aaaagcactt tgaaaagaga gtgaaacagc acgtgaaatt gttgaaaggg aagggtattg     360
    ggctcgacat gggatttacg catcgttgcc tctcgtgggc ggcgctctgg gtttttcctg     420
    ggccagcatc ggtttttcgtt gcaggataag gacaattgga atgtggctcc tcggagtgtt     480
    atagcctttt gtagatgctg cgtatgggga ccgagggctg cggcggactc gtttcgtctc     540
    ggatgctggc acaacggcgc aataccgc                                        568
//
```


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 relationalships:

Eggs and larvae: Ref . No.:
Characteristics:
Abundance:

Biochemical aspects:
Proximate analysis: moisture/ fat/ protein/ carbohydrate/ash Ref. No.
Electrophoresis: Ref. No.

SPAWNING INFORMATION:
Locality: Main Ref:
Season:
Fecundity:
Comment:

MAJOR PUBLICATIONS (INDIAN):
(include review articles, monographs, books etc.)
(Internal Reports of NIO's EIA's studies)
Ph.D.Thesis of N.Prabhakaran (CUSAT, Kochi)

LIST OF INDIAN EXPERTS(Name, address, phone, fax, e-mail etc.)
1.Dr (Mrs) Ranu Gupta, NIO,RC, PBox.1616, Kochi 682014.
e-mail drrgupta@rediffmail.com Res.Ph.0484 2538067
2 Dr.G.S.Prasad, IMTECH,Chandigarh.

ACKNOWLEDGMENT:
(List of persons who contributed, modified or checked information)
Assisted by Project Assistant, Mrs.Maria Honey.