

BIO CATALYST

THE POWER IN NATURE



Agriculture Case Study - Oman

BIO CATALYST
THE POWER IN NATURE



What is BOC?

The bio-catalytic compositions (BOCs) of Bio-Organic Catalyst offer an entirely new technological breakthrough within the traditional water treatment and cleaning chemistries marketplace. BOCs are all based upon a breakthrough technological understanding of how to unlock the inherent transformation power of natural biological pathways. The BOC products contain no bacteria and are completely nontoxic and biodegradable.

The functional mechanism of BOCs is attributed to molecules consisting of both a hydrophobic and a hydrophilic element. BOC's patented amphiphilic molecules will attach to components such as;

- Bacteria Organic
- Wastes Oxygen
- Foul Gases
- Byproducts of decaying organic matter
  (sulfides, amines, mercaptans, skatole, and other contaminants)

BIO CATALYST
THE POWER IN NATURE

Patent Holding



US005820758A

United States Patent [19]
Dale et al.

[11] **Patent Number: 5,820,758**
[45] **Date of Patent: Oct. 13, 1998**

[54] **COMPOSITION AND METHOD FOR CLARIFYING AND DEODORIZING A STANDING BODY OF WATER**

[75] Inventors: **Parker Dale**, Newport Beach; **John E. Hill**, Irvine, both of Calif.

[73] Assignee: **Neozyme International, Inc.**, Newport Beach, Calif.

[21] Appl. No.: **790,376**

[22] Filed: **Jan. 28, 1997**

Related U.S. Application Data

[60] Provisional application No. 60/010,890 Jan. 31, 1996.

[51] **Int. Cl.**[6] **C02F 3/00**; C12P 1/02; C12N 9/00; C12N 1/16

[52] **U.S. Cl.** **210/601**; 210/606; 435/171; 435/183; 435/255.2; 435/262

[58] **Field of Search** 435/183, 243–252.1, 435/255.2, 262, 262.5, 264, 171; 210/601, 605, 606

[56] **References Cited**

U.S. PATENT DOCUMENTS

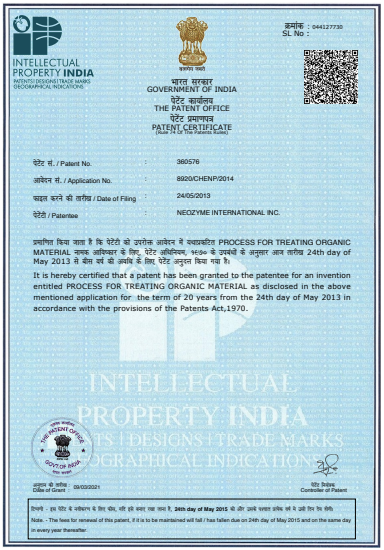
2,424,049	7/1947	Parker et al.	134/3
3,404,068	10/1968	Batistoni	195/61
3,519,570	7/1970	McCarty	252/135
3,635,797	1/1972	Battistoni et al.	195/56
4,822,490	4/1989	Dyadechko et al.	210/611
5,071,765	12/1991	Wiatr	435/264
5,075,008	12/1991	Chigusa et al.	210/610
5,108,746	4/1992	Rho et al.	424/94.2
5,128,262	7/1992	Lindoerfer et al.	435/264
5,133,892	7/1992	Chun et al.	252/90
5,139,945	8/1992	Liu	435/252
5,227,067	7/1993	Runyon	210/606
5,326,477	7/1994	Fegna et al.	210/632
5,352,386	10/1994	Rahman et al.	252/548
5,352,387	10/1994	Rahman et al.	252/548
5,358,656	10/1994	Humphreys et al.	252/174.12
5,364,789	11/1994	Guinn et al.	435/262.5
5,369,031	11/1994	Middlebrich et al.	435/284
5,372,944	12/1994	Swanson	435/252.1
5,385,685	1/1995	Humphreys et al.	252/174.17
5,389,279	2/1995	Au et al.	252/108
5,407,577	4/1995	Nghiem	210/606
5,466,396	11/1995	Madison et al.	252/557
5,503,766	4/1996	Kalperger	252/174.12
5,560,872	10/1996	Rahman et al.	510/392

Primary Examiner—David M. Naff
Attorney, Agent, or Firm—Merchant, Gould, Smith, Edell, Welter & Schmidt

[57] **ABSTRACT**

A composition and method are provided for clarifying and deodorizing a standing body of water such as fresh and salt water pools and water of spas, cooling towers, lakes and ponds such as aquaculture ponds. The composition contains by weight about 20.26% of a fermentation supernatant from a *Saccharomyces cerevisiae* culture, about 0.1% sodium benzoate, about 0.01% imidazolidinyl urea, about 0.15% diazolidinyl urea and about 9% non-ionic surfactant. Preferably, anionic and cationic surfactants and urea are absent from the composition. The composition may also contain about 0.05%, by weight, calcium chloride. The method is carried out by adding a solution of the composition to a body of water to provide in the water by weight about 0.02% to about 0.1% of a fermentation supernatant from a *Saccharomyces cerevisiae* culture, about 0.00005% to about 0.0001% sodium benzoate, about 0.000002% to about 0.00001% imidazolidinyl urea, about 0.00003% to about 0.0001% diazolidinyl urea, about 0.002% to about 0.009% non-ionic surfactant, and about 0.000005% calcium chloride when present.

11 Claims, No Drawings



INTELLECTUAL PROPERTY INDIA
PATENTS | DESIGNS | TRADE MARKS | GEOGRAPHICAL INDICATIONS

भारत सरकार
GOVERNMENT OF INDIA
पेटेंट कार्यालय
THE PATENT OFFICE
पेटेंट प्रमाणपत्र
PATENT CERTIFICATE
(Rule 74 Of The Patents Rules)

क्रमांक : 044127730
SL No :

पेटेंट सं. / Patent No.	:	360576
आवेदन सं. / Application No.	:	8920/CHENP/2014
फाइल करने की तारीख / Date of Filing	:	24/05/2013
पेटेंटी / Patentee	:	NEOZYME INTERNATIONAL INC.

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में वर्णनकृत PROCESS FOR TREATING ORGANIC MATERIAL नामक आविष्कार के लिए, पेटेंट अधिनियम, १९७० के उपबंधों के अनुसार आज तारीख 24th day of May 2013 से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled PROCESS FOR TREATING ORGANIC MATERIAL as disclosed in the above mentioned application for the term of 20 years from the 24th day of May 2013 in accordance with the provisions of the Patents Act,1970.

INTELLECTUAL PROPERTY INDIA
PATENTS | DESIGNS | TRADE MARKS
GEOGRAPHICAL INDICATIONS

अनुदान की तारीख : 09/03/2021
Date of Grant :

पेटेंट नियंत्रक
Controller of Patent

टिप्पणी - इस पेटेंट के अधिकार के लिए फीस, यदि इसे बनाए रखा जाना है, 24th day of May 2015 को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देय होगी।
Note. - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 24th day of May 2015 and on the same day in every year thereafter.

BIO CATALYST
THE POWER IN NATURE

Agriculture – Phyto-C3 Water & Soil Conditioner

Phyto-C3 is a highly concentrated liquid biocatalytic agent that increases crop yields and quality while offering breakthrough performance in keeping irrigation lines and greenhouses free of scale and slime.



Phyto-C3 is completely safe and green. Phyto-C3 immediately increases oxygen transfer, increases dissolved oxygen and breaks down biofilms.

Phyto-C3 can be used for both indoor and outdoor farming.

NON-TOXIC AND SAFE
BIO-ORGANIC SEAL OF SAFETY
HUMAN, ANIMAL & MARINE LIFE

The Bio-Organic Seal of Safety™ is our commitment to offering advanced green biocatalytic solutions that transform the treatment of our water. BOC product formulations have undergone rigorous independent testing, including leading recognized EPA certified laboratories.

BIO CATALYST
THE POWER IN NATURE

Project Background

- **Client:** KV Group International - OMAN
- **Trial Duration:-** 106 Days from 25th November,2022 to March 10th,2023
- **Trial Location:-** GH-20 – Al-Hayema in Oman
- **Trial Area:-** Single Greenhouse Tunnel
- **Grow Conditions:-** Controlled Environment Agriculture in Greenhouse with Ground Soil
- **Trial crop:-** Salad Cucumber
- **Number of Plants:-** 850



BIO CATALYST
THE POWER IN NATURE

Phase 1: Germination

- **Time Frame:** 25th November to 28th December
- No noticeable difference in plant growth during Germination period.
- **Plant height:** 30 cm

Phase 2: Flowering, Fruiting and Harvesting Stage

- **Time Frame:** December 28th,2022 to March 10th,2023
- **Benefits:**
  - Increased Height by 6 inches
  - Increased Flowering
  - Increased Nodes on Plants
  - Earlier Harvest by 5 days





BIO CATALYST
THE POWER IN NATURE

Trial Summary

Control	Phyto C3	Difference	% Difference
2,970 Kgs	3,350 Kgs	380 Kgs	12%





BIO
CATALYST
THE POWER IN NATURE