

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
15 February 2001 (15.02.2001)

PCT

(10) International Publication Number
WO 01/10217 A1

(51) International Patent Classification⁷: A01N 43/653 //
(A01N 43/653, 43:84, 43:76, 43:60, 43:56, 43:50, 43:46,
43:40, 43:06)

ELMORE, Michael, E.; 764 Lake Meadow Drive, Col-
lierville, TN 38017 (US).

(21) International Application Number: PCT/US00/20269

(74) Agent: LEE, Christine, S.; Morgan, Lewis & Bockius
LLP, 1800 M Street, NW, Washington, DC 20036 (US).

(22) International Filing Date: 26 July 2000 (26.07.2000)

(81) Designated States (*national*): AU, BR, CA, CN, FI, JP,
MX, NZ, SG, ZA.

(25) Filing Language: English

(84) Designated States (*regional*): European patent (AT, BE,
CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC,
NL, PT, SE).

(26) Publication Language: English

(30) Priority Data:
09/369,298 6 August 1999 (06.08.1999) US

Published:

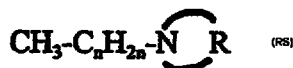
- With international search report.
- Before the expiration of the time limit for amending the
claims and to be republished in the event of receipt of
amendments.

(71) Applicant: BUCKMAN LABORATORIES INTERNA-
TIONAL, INC. [US/US]; 1256 North McLean Boulevard,
Memphis, TN 38108 (US).

For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.

(72) Inventors: OPPONG, David; 8587 Sunnyvale Street, S.
Cordova, TN 38018 (US). WHITEMORE, Marilyn, S.;
2026 Widgeon Way Drive, Memphis, TN 38138 (US). EL-
LIS, M., Sheldon; 8756 Riverwood Farms Parkway, Cor-
dova, TN 38018 (US). MILLER, Robert, H.; 1400 Hick-
ory Grove Loop, Oakland, TN 38060 (US). ZHOU, Xiang-
dong; 4271 1 Hilldale Avenue, Memphis, TN 38117 (US).

(54) Title: MICROBICIDAL COMPOSITIONS AND METHODS USING COMBINATIONS OF PROPICONAZOLE AND
N-ALKYL HETEROCYCLES AND SALTS THEREOF



(57) Abstract: A method for increasing the effectiveness of the microbicide propiconazole, (RS)-1-2-[(2,4-dichlorophenyl)-2-propyl-1,3-dioxalan-2-ylmethyl]-1H-1,2,4-triazole, is described. In the method, propiconazole and a potentiator, an N-alkyl heterocyclic compound, its salt, or a mixture thereof, are applied to a substrate or aqueous system subject to the growth of microorganisms. The N-alkyl heterocyclic compound, its salt, or a mixture thereof is applied in an amount effective to increase the microbicidal activity of the microbicide. The N-alkyl heterocyclic compound has formula (I). The variable "n" ranges from 5 to 17, and the heterocyclic ring defined by (II) is a substituted or unsubstituted ring having four to eight members. Microbicidal compositions are described where propiconazole and an N-alkyl heterocyclic compound, its salt, or a mixture thereof are present in a combined amount effective to control the growth of at least one microorganism. Methods for controlling the growth of microorganisms on various substrates and in various aqueous systems are also described. The combination of propiconazole and N-alkyl heterocyclic compound, its salt, or a mixture thereof is particularly useful as microbicidal in the leather industry, the lumber industry, the papermaking industry, the textile industry, the agricultural industry, and the coating industry, as well as in industrial process waters.

WO 01/10217 A1