



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

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| <b>(51) International Patent Classification <sup>6</sup>:</b><br><b>C05F 17/02, 9/02</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | <b>A1</b> | <b>(11) International Publication Number:</b> <b>WO 99/03799</b><br><b>(43) International Publication Date:</b> 28 January 1999 (28.01.99)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>(21) International Application Number:</b> PCT/NZ98/00107<br><b>(22) International Filing Date:</b> 20 July 1998 (20.07.98)<br><b>(30) Priority Data:</b><br>328373 18 July 1997 (18.07.97) NZ<br><b>(71) Applicant (for all designated States except US):</b> WILLSON BROWN ASSOCIATES LIMITED [NZ/NZ]; 46 Rockfield Road, Penrose, Auckland (NZ).<br><b>(72) Inventors; and</b><br><b>(75) Inventors/Applicants (for US only):</b> BROWN, Paul [NZ/NZ]; 46 Rockfield Road, Penrose, Auckland (NZ). WILLSON, Graham, Fairlie [NZ/NZ]; 3 Mary Anne Muller Crescent, Stoke, Nelson (NZ).<br><b>(74) Agents:</b> HAWKINS, Michael, Howard et al.; Baldwin Shelston Waters, NCR Building, 342 Lambton Quay, Wellington (NZ).                                                                                                                                           |           | <b>(81) Designated States:</b> AL, AM, AT, AT (Utility model), AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, CZ (Utility model), DE, DE (Utility model), DK, DK (Utility model), EE, EE (Utility model), ES, FI, FI (Utility model), GB, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SK (Utility model), SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).<br><br><b>Published</b><br><i>With international search report.</i><br><i>Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i> |
| <b>(54) Title:</b> IMPROVEMENTS TO MECHANICAL COMPOSTING<br><br><b>(57) Abstract</b><br><br><p>A composting system and method incorporating a vertical insulated composting tower with one or more compartments. The base of each compartment being fitted with a plenum and grate through which air is self induced and output is regularly removed. The method of composting biodegradable waste material utilises a plug flow principle including inducing low air flow rates through a compost pile using column energy. The method utilises high temperature pyro/thermopylic micro-organism activity in the compost pile and retaining pile energy above stoichiometric levels by controlling the induced air flow. Evolved gas extraction is utilised in the compost pile and constant biofilm is maintained by combined cycle anaerobic/aerobic operation.</p> |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |