



# **Draft Assessment Report (DAR)**

**- public version -**

**Initial risk assessment provided by the rapporteur Member State  
Germany for the existing active substance**

**BEAVERIA BASSIANA GHA**

**of the fourth stage of the review programme  
referred to in Article 8(2) of Council Directive 91/414/EEC**

**Volume 2, Annex A**

**August 2008**

# Draft Assessment Report

22 November 2007

*Beauveria bassiana* GHA

**Volume 2**

**Annex A**

List of Tests and Studies

**Rapporteur Member State: Germany**

WARNING: This document forms part of an EC evaluation data package and should not be read in isolation. Registration must not be granted on the basis of this document.

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## A.1 Identity

## A.1 Identity (OECD IIM 1; OECD IIIM 1)

Author(s)	Annex point/ reference number	Year	Title source (where different from company) report no. GLP or GEP status (where relevant), published or not BVL registration number	Data protection claimed  Y/N	Owner <sup>1</sup>
Alley, J. Rosinka, J. Jaroski, S.	KIIM 1.4.2.3 KIIM 1.4.3 (OECD)	1996	Contaminant Analysis of three lots of Mycotrol TGAI ( <i>Beauveria bassiana</i> strain GHA) 960418 GLP: N, published: N 1300925 / CHE2006-582	Y	MEU
Becerra, M.; Sears, J.	KIIM 1.4.4 (OECD)	1999	Analysis of Mycotrol / BotaniGard TGAI ( <i>Beauveria bassiana</i> strain GHA Conidial Powders) for the metabolites beauvericin and bassianolide 98-06 GLP: N, published: N 1677611 /	Y	MEU
Bradley, C.	KIIM 1.3.1 KIIM 1.3.6 IIM 1.4.3.1 (OECD)	1991	Product identity and disclosure of ingredients N/A GLP: N, published: N 1300918 / BWS2006-63	Y	LAM
Bradley, C.	KIIM 1.4.3 (OECD) KIIM 1.4.3.1 KIIM 1.7.3	1998	Minor Modifications to Manufacturing Process for Mycotrol TGAI and End Product Formulation N/A GLP: N, published: N 1300928 / BWS2006-60, BEI2006-69	Y	LAM
Castrillo, L.A., Vandenberg, J.D., Wraight, S.P.	KIIM 1.4.3 (OECD)	2003	Strain-specific detection of introduced <i>Beauveria bassiana</i> in agricultural fields by use of sequence-characterized amplified region markers Journal of Invertebrate Pathology 82, 75-83 GLP: N, published: N 1675896	Y	LIT
Chatriand, G.	KIIM 1.4.4 (OECD)	2005	Not documented GLP: N, published: N 1300936 / CHE2006-794	Y	LAM
De Hoog, G. S.	KIIM 1.3.1 (OECD) KIIM 1.3.3	1972	The genera Beauveria, Isaria, Tritirachium and Acrodontium gen. nov. Studies in Mycology 1, 1 - 41 N/A Request Ref. No. DG 79130 GLP: N, published: Y 1300919 / BWS2006-58	N	LIT

<sup>1</sup> Only notifier listed

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Author(s)	Annex point/ reference number	Year	Title source (where different from company) report no. GLP or GEP status (where relevant), published or not BVL registration number	Data protection claimed  Y/N	Owner <sup>1</sup>
Jaronski, S.T.	KIIM 1.3.3 (OECD)	1993	Characterisation of <i>Beauveria bassiana</i> (SOP #3.5; Edition #01) and Including Sample Characterisations N/A GLP: N, published: N 1300923 / BWS2006-70	Y	LAM
Jaronski, S.T.	KIIM 1.4.3 (OECD) KIIIM1 1.7.3	1993	TGAI Physican stability study of <i>Beauveria bassiana</i> strain GHA: temperature extremes 93-002 GLP: N, published: N 1300926 / BWS2006-62, BEI2006-55	Y	LAM
Jaronski, S.T.	KIIM 1.4.4 (OECD)	1997	Five-lot analysis of <i>Beauveria bassiana</i> strain GHA, technical grade active ingredient (TGAI) 97-01 GLP: Y, published: N 1300932 / CHE2006-756	Y	LAM
Jaronski, S.T.	KIIM 1.4.4 (OECD)	1993	Analysis of GH TGAI ( <i>Beauveria bassiana</i> strain) for the metabolite Oosporein 93-032 GLP: N, published: N 1300935 / CHE2006-753	Y	LAM
Jaronski, S.T.; Becarra M.; Sears, J.	KIIM 1.4.4 (OECD)	1995	Analysis of Mycotrol GH TGAI ( <i>Beauveria bassiana</i> strain GHA Conditional Powders) for the metabolites Beauvericin and Bassianolide 94-009 GLP: N, published: N 1300934 / CHE2006-752	Y	LAM
Jaronski, S.T.; Butler, E.; Kahler, A.	KIIM 1.3.1 (OECD)	1993	<i>Beauveria bassiana</i> strain GHA cDNA libaray construction and RFLP analysis R145-93/003 GLP: N, published: N 1300920 / BWS2006-54	Y	LAM
Jaronski, S.T.; Lutz, R.	KIIM 1.4.6 (OECD)	1997	Physical and chemical properties of <i>Beauveria bassiana</i> strain GHA TGAI: coulor, odour, physical state, bulk densisty and pH 97-02 GLP: Y, published: N 1300938 / CHE2006-758	Y	LAM
Lubbe, L.A.J.	KIIM 1.4.7 (OECD)	2005	verzoek wijziging naam toelathinghounder 20050224 WNAW. botaniGard WP 12621 N CTB (college voor de toelating van bestrijdingsmiddelen Dhr. L.A.J-Lubbe 471881 GLP: N, published: N 1300939 / BWS2006-64	Y	LAM

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Lutz, R.; Jaronski, S.	KIIM1 1.7.4 (OECD)	1998	Contaminant Analysis of Three Lots of Mycotrol/BotaniGard 22WP ( <i>Beauveria bassiana</i> strain GHA) GLP: N, published: N 1679920 /	Y	MEU
M.A.B.	KIIM 1.4.3 (OECD) KIIM 1.4.4	1998	Analysis of TGAI production lots from 1997- 1998 N/A GLP: N, published: N 1300927 / BWS2006-61, CHE2006-754	Y	LAM
Rehner S.A., Buckley, E.	KIIM 1.3.3 (OECD)	2005	A <i>Beauveria</i> phylogeny inferred from nuclear ITS and EF1-alpha sequences: evidence for cryptic diversification and links to <i>Cordyceps</i> teleomorphs Mycologia, 97 (1), 84-98, not applicable GLP: N, published: Y 1673810 / BWS2006-33	N	LIT

**Codes of owner**

LAM Laverlam International Corporation  
 LIT Literature  
 MEU Mycotech Europe Ltd.

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## A.2 Biological properties of the micro-organism – Technical properties of the preparation (OECD IIM 2; OECD IIIM 2)

Author(s)	Annex point/ reference number	Year	Title source (where different from company) report no. GLP or GEP status (where relevant), published or not BVL registration number	Data protection claimed Y/N	Owner <sup>2</sup>
Anonymous	KIIM1 2.2 (OECD)	2000	Effect of temperature on the Shelf - life of BotaniGard emulsionsfiable suspension (code ES9601) and Botani Gard 22 WP (Code WP9616B) N/A GLP: Y, published: N 1301008 / PHY2006-480	Y	LAM
Anonymous	KIIM 2.4 (OECD)	2000	EPA: <i>Beauveria bassiana</i> strain ATCC 74040 (128818) Technical Document Environmental Protection Agency United States GLP: N, published: Y 1673974 /	N	LIT
Anonymous	KIIM1 2.3.1 (OECD)	2006	MSDS for BotaniGard 22 WP Laverlahm International Corp. , GLP: N, published: Y 1678085 /	N	LIT
Bradley, C.	KIIM 2.6 (OECD) IIM 2.7.2	1993	Discussion of formation of unintentional ingredients GLP: N, published: N 1300937 / BWS2006-72	Y	LAM
Bradley, C.	KIIM 2.1 (OECD) KIIM 2.2 KIIM 2.3 KIIM 2.5	1991	Product identity and disclosure of ingredients N/A GLP: N, published: N 1300940 / BWS2006-63	Y	LAM
Champlin, F.R.; Gruha, E.A.	KIIM 2.7.2 (OECD)	1979	Noninvolvement of beauvericin in the entomopathogenicity of <i>Beauveria bassiana</i> Applied and Environmental Microbiology , 1122-1125 GLP: N, published: Y 1678057 /	N	LIT
Chatriand, G.	KIIM1 2.2 (OECD)	2006	Eight-lot analysis of BotaniGard 22WPshelf life stability GLP: N, published: N 1677991 /	Y	MEU
EPA	KIIM1 2.2 (OECD)	2000	<i>Beauveria bassiana</i> strain GHA (128924) technical document environmental protection agency (EPA) EPA , GLP: N, published: Y 1678066 /	N	LIT

<sup>2</sup> Only notifier listed



Author(s)	Annex point/ reference number	Year	Title source (where different from company) report no. GLP or GEP status (where relevant), published or not BVL registration number	Data protection claimed  Y/N	Owner <sup>2</sup>
EPA	KIIIM1 2.2 (OECD)	2004	40 CFR Ch. I (7-1-04 Edition) Part 180 - Tolreances and exemptions for pesticide chemicals in food EPA , 300-318 GLP: N, published: Y 1678070 /	N	LIT
EPA	KIIIM1 2.2 (OECD)	2004	U.S. Environmental protection agency - Office of pesticide programs - List of inert pesticide ingredients - List 4A - Minimal risk inert ingredients EPA , GLP: N, published: Y 1678074 /	N	LIT
EPA	KIIIM1 2.2 (OECD)	2006	Inerts reassessment: five exemptions from the requirement of a tolerance for petroleum hydrcarbons EPA , GLP: N, published: Y 1678081 /	N	LIT
Fargues, J. et al.	KIIM 2.4 (OECD) IIM 2.8	1997	Effect of temperature on vegetative growth of <i>Beauveria bassiana</i> isolates from different origins 3, 383-392 Mycologia, 89(8) GLP: N, published: Y 1300943 / BWS2006-65	N	LIT
Fernandez, S.	KIIM 2.5 (OECD)	2001	Bassiana (bals.) vuill. in colorado potato beetle (leptinotarsadecemlineata) GLP: N, published: Y 1677994 /	N	LIT
Foster, B.	KIIIM1 2.4.2 (OECD)	2006	Analysis of Botaniguard 22WP for Persistent foam CEMR-3034 GLP: Y, published: N 1301011 / PHY2006-758	Y	LAM
Humber, R.A.; Hansen, K.S.	KIIM 2.1 (OECD)	2003	Catalog of isolates including all indices USDA-ARS Plant Protection Research Unit , GLP: N, published: Y 1677989 /	Y	LIT
Isaka, M. Kittakoop, P.; Kirtikara, K.; Hywel-Jones, N.; Thebtaranonth, Y.	KIIM 2.7.2 (OECD)	2005	Bioactive substances from insect pathogenic fungi National Center for Genetic Engineering and Biotechnology, Thailand , GLP: N, published: Y 1677998 /	N	LIT

Author(s)	Annex point/ reference number	Year	Title source (where different from company) report no. GLP or GEP status (where relevant), published or not BVL registration number	Data protection claimed  Y/N	Owner <sup>2</sup>
Jaronski S.T.	KIIM 2.8 (OECD)	1993	TGAI Physical stability study of <i>Beauveria bassiana</i> strain GHA: sunlight effects. 93-001 GLP: Y, published: N 1300948 / BWS2006-67	Y	LAM
Jaronski, S. T. and Jaronski, S.	KIIM1 2.1 KIIM1 2.3.3 (OECD)	1997	Physical and Chemical Properties of Mycotrol WP/BotaniGard WP9616B (Wettable Powder) ( <i>Beauveria bassiana</i> strain GHA): Color, Odor, Physical State, Bulk Density, and pH 96-05a GLP: Y, published: N 1301007 / PHY2006-355	Y	LAM
Jaronski, S.T.	KIIM 2.8 (OECD)	1993	TGAI Physican stability study of <i>Beauveria bassiana</i> strain GHA: temperature extremes 93-002 GLP: N, published: N 1300950 / BWS2006-62	Y	LAM
Jaronski,S.T. and Britton, J.A.	KIIM 2.8 (OECD)	1993	Effect of pH and metal ions on <i>Beauveria bassiana</i> strain GHA in aqueous suspension 93-025 GLP: Y, published: N 1300947 / BWS2006-68	Y	LAM
Kang, J.	KIIM1 2.4.1 KIIM 2.4.3 KIIM 2.4.4 KIIM 2.4.5 (OECD)	2005	Analysis of Botaniguard 22WP CEMR-2173 GLP: Y, published: N 1301010 / PHY2006-357	Y	LAM
Aleo, M.D., Wyatt, R.D., Schnellmann, R.G.	KIIM 2.6	1991	Mitochondrial dysfunction is an early event in ochratoxin A but not oosporein toxicity to rat renal proximal tubules. Toxicol Appl Pharmacol (107) 73-80 GLP: N, published: Y BVL No. 1690628	N	LIT
Benz, R.	KIIM 2.6	1978	Alkali ion transport through lipid bilayer membranes mediated by enniatin A and B and beauvericin. J Membr.Biol (43) 367-394 GLP: N, published: Y BVL No. 1690635	N	LIT
Brown, T.P., Fletcher, O.J., Osuna, O., Wy- att, R.D.	KIIM 2.6	1987	Microscopic and ultrastructural renal pathology of oosporein-induced toxicosis in broiler chicks. Avian Dis (31) 868-877 GLP: N, published: Y BVL No. 1690636	N	LIT

## A.2 Biological properties of the micor-organism

Author(s)	Annex point/ reference number	Year	Title source (where different from company) report no. GLP or GEP status (where relevant), published or not BVL registration number	Data protection claimed  Y/N	Owner <sup>2</sup>
Calo, L., Fornelli, F., Rami- res, R., Nenna, S., Tursi, A., Caiaffa, M.F., Macchia, L.	KIIM 2.6	2004	Cytotoxic effects of the mycotoxin beauvericin to human cell lines of myeloid origin. Pharmacol Res (49) 73-77 GLP: N, published: Y  BVL No. 1690637	N	LIT
Calo, L., Fornelli, F., Rami- res, R., Nenna, S., Tursi, A., Caiaffa, M.F., Macchia, L.	KIIM 2.6	2004	Erratum to "Cytotoxic effects of the mycotoxin beauvericin to human cell lines of myeloid origin" [Pharm. Res. 49 (1) 73-77]. Pharmacol Res (49) 299  BVL No. 1690642	N	LIT
Chen, B.F., Tsai M.C., Jow, G.M.	KIIM 2.6	2006	Induction of calcium influx from extracellular fluid by beauvericin in human leukemia cells. Biochem Biophys Res Commun (340) 134-139 GLP: N, published: Y BVL No. 1690640	N	LIT
Cole, R.J., Kirk- sey, J.W., Cut- ler, H.G., Davis, E.E.	KIIM 2.6	1974	Toxic effects of oosporein from Chaetomium trilaterale. J Agric Food Chem (22) 517-520 GLP: N, published: Y BVL No. 1690644	N	LIT
Cook, J.L., Routes, B.A., Walker TA, Colvin KL, Routes JM	KIIM 2.6	1999	E1A oncogene induction of cellular susceptibi- lity to killing by cytolytic lymphocytes through target cell sensitization to apoptotic injury. Exp Cell Res (251) 414-423 GLP: N, published: Y BVL No. 1690645	N	LIT
Cook JL, Routes BA, Leu, C.Y., Walker, T.A., Colvin, K.L.	KIIM 2.6	1999	E1A oncogene-induced cellular sensitization to immune-mediated apoptosis is independent of p53 and resistant to blockade by E1B 19 kDa protein. Exp Cell Res (252) 199-210 GLP: N, published: Y BVL No. 1690648	N	LIT
Dombrink- Kurtzman, M.A.	KIIM 2.6	2003	Fumonisin and beauvericin induce apoptosis in turkey peripheral blood lymphocytes. Mycopathologia (156) 357-364 GLP: N, published: Y BVL No. 1690913	N	LIT
EMA (Com- mittee for veteri- nary medicinal products)	KIIM 2.6	2003	Summary report: Oxalic acid. EMA/MRL/891/03-FINAL GLP: N, published: Y  BVL No. 1690914	N	LIT

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Favilla, M., Macchia, L., Gallo, A., Al- tomare, C.	KIIM 2.6	2006	Toxicity assessment of metabolites of fungal biocontrol agents using two different (Artemia salina and Daphnia magna) invertebrate bioas- says. Food Chem Toxicol (44) 1922-1931 GLP: N, published: Y BVL No. 1690915	N	LIT
Fotso, J., Smith, J.S.	KIIM 2.6	2003	Evaluation of beauvericin toxicity with the bacterial bioluminescence assay and the Ames mutagenicity bioassay. Journal of Food Science (68) 1938-1941 GLP: N, published: Y BVL No. 1690916	N	LIT
Harnois DM, Que FG, Celli A, LaRusso NF, Gores GJ	KIIM 2.6	1997	Bcl-2 is overexpressed and alters the threshold for apoptosis in a cholangiocarcinoma cell line. Hepatology (26) 884-890 GLP: N, published: Y BVL No. 1690917	N	LIT
Ivanova L, Skjerve E, Erik- sen GS, Uhlig S	KIIM 2.6	2006	Cytotoxicity of enniatins A, A1, B, B1, B2 and B3 from Fusarium avenaceum. Toxicon (47) 868-876 GLP: N, published: Y BVL No. 1690918	N	LIT
Jeffs LB, Kha- chatourians GG	KIIM 2.6	1997	Toxic properties of Beauveria pigments on erythrocyte membranes. Toxicon (35) 1351-1356 GLP: N, published: Y BVL No. 1690919	N	LIT
Jow GM, Chou CJ, Chen BF, Tsai JH	KIIM 2.6	2004	Beauvericin induces cytotoxic effects in human acute lymphoblastic leukemia cells through cytochrome c release, caspase 3 activation: the causative role of calcium. Cancer Lett (216) 165-173 GLP: N, published: Y BVL No. 1690921	N	LIT

A.2 Biological properties of the micor-organism

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Kamyar MR, Kouri K, Rawn- duzi P, Studenik C, Lemmens- Gruber R	KIIM 2.6	2006	Effects of moniliformin in presence of cyclo- hexadepsipeptides on isolated mammalian tissue and cells. Toxicol In Vitro (20) 1284-1291 GLP: N, published: Y BVL No. 1690629	N	LIT
Klaric MS, Pepeljnjak S, Domijan AM, Petrik J	KIIM 2.6	2007	Lipid peroxidation and glutathione levels in porcine kidney PK15 cells after individual and combined treatment with fumonisin B(1), beauvericin and ochratoxin A. Basic Clin Pharmacol Toxicol (100) 157-164 GLP: N, published: Y BVL No. 1690632	N	LIT
Kouri K, Lem- mens M, Lem- mens-Gruber R	KIIM 2.6	2003	Beauvericin-induced channels in ventricular myocytes and liposomes. Biochim Biophys Acta (1609) 203-210 GLP: N, published: Y BVL No. 1690634	N	LIT
Kouri K, Du- chen MR, Lemmens- Gruber R	KIIM 2.6	2005	Effects of beauvericin on the metabolic state and ionic homeostasis of ventricular myocytes of the guinea pig. Chem Res Toxicol (18) 1661-1668 GLP: N, published: Y BVL No. 1690638	N	LIT
Krska R, Schuhmacher R, Grasserbauer M, Lemmens M, Lemmens- Gruber R, Adler A, Lew H	KIIM 2.6	1997	Effects of beauvericin to mammalian tissue and its production by Austrian isolates of <i>Fusarium</i> <i>proliferatum</i> and <i>Fusarium subglutinans</i> . Mycotoxin Research (13) 11-16 GLP: N, published: Y BVL No. 1690639	N	LIT

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Lemmens-Gruber, R., Rachoy, B., Steininger, E., Kouri, K., Saleh, P., Krska, R., Josephs, R., Lemmens, M.	KIIM 2.6	2000	The effect of the Fusarium metabolite beauvericin on electromechanical and -physiological properties in isolated smooth and heart muscle preparations of guinea pigs. Mycopathologia (149) 5-12 GLP: N, published: Y BVL No. 1690643	N	LIT
Lin, H.I., Lee, Y.J., Chen, B.F., Tsai, M.C., Lu, J.L., Chou, C.J, Jow, G.M.	KIIM 2.6	2005	Involvement of Bcl-2 family, cytochrome c and caspase 3 in induction of apoptosis by beauvericin in human non-small cell lung cancer cells. Cancer Lett (230) 248-259 GLP: N, published: Y BVL No. 1690647	N	LIT
Manning, R.O., Wyatt, R.D.	KIIM 2.6	1984	Comparative toxicity of Chaetomium contaminated corn and various chemical forms of oosporein in broiler chicks. Poult.Sci (63) 251-259 GLP: N, published: Y BVL No. 1690649	N	LIT
Massini, P., Naf, U.	KIIM 2.6	1980	Ca <sup>2+</sup> ionophores and the activation of human blood platelets. The effects of ionomycin, beauvericin, lysocellin, virginiamycin S, lasalocid-derivatives and McN 4308. Biochim Biophys Acta (598) 575-587 GLP: N, published: Y BVL No. 1690651	N	LIT
Nakajyo, S., Kometani, A., Shimizu, K., Urakawa, N.	KIIM 2.6	1981	Effects of Bassianolide on Drug Induced Contractions of Isolated Guinea-Pig Aorta. Bulletin of the Nippon Veterinary and Animal Science University (30) 71-76 GLP: N, published: Y BVL No. 1690652	N	LIT
Nakajyo, S., Shimizu, K., Kometani, A., Kato, K., Kamizaki, J., Isogai, A., Urakawa, N.	KIIM 2.6	1982	Inhibitory effect of bassianolide, a cyclodepsipeptide, on drug-induced contractions of isolated smooth muscle preparations. Jpn J Pharmacol (32) 55-64 GLP: N, published: Y BVL No. 1690653	N	LIT
Nakajyo, S., Shimizu, K., Kometani, A., Isogai, A., Urakawa, N.	KIIM 2.6	1982	The Effect of Bassianolide on A Nicotine Induced Contraction in Isolated Smooth and Skeletal Muscle Preparations. Bulletin of the Nippon Veterinary and Animal Science University (31) 33-39 GLP: N, published: Y BVL No. 1690654	N	LIT

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Nakajyo, S., Shimizu, K., Kometani, A., Yuyama, A., Kobayashi, H., Suzuki, A., Urakawa, N.	KIIM 2.6	1982	Effects of Bassianolide on Muscarinic and Nicotinic Responses to Acetyl Choline in Various Tissue Preparations. Bulletin of the Nippon Veterinary and Animal Science University (31) 40-50 GLP: N, published: Y BVL No. 1690659	N	LIT
Nakajyo, S., Shimizu, K., Kometani, A., Suzuki, A., Ozaki, H., Ura- kawa, N.	KIIM 2.6	1983	On the inhibitory mechanism of bassianolide, a cyclodepsipeptide, in acetylcholine-induced contraction in guinea-pig taenia coli. Jpn J Pharmacol (33) 573-582 GLP: N, published: Y BVL No. 1690661	N	LIT
Nakajyo, S., Shimizu, K., Urakawa, N.	KIIM 2.6	1984	Effects of Bassianolide on the Muscle Contraction Induced by Electrical Stimulation in the Guinea-Pig Hypogastric Nerve-Vas Deferens Preparation. Bulletin of the Nippon Veterinary and Animal Science University (33) 63-70 GLP: N, published: Y BVL No. 1690662	N	LIT
Nakajyo, S., Matsuoka, K., Kitayama, T., Yamamura, Y., Shimizu, K., Kimura, M., Urakawa, N.	KIIM 2.6	1987	Inhibitory effect of beauvericin on a high K+-induced tonic contraction in Guinea-Pig taenia coli. Jpn J Pharmacol (45) 317-325 GLP: N, published: Y BVL No. 1690671	N	LIT
Namatame, I., Tomoda, H., Si, S., Yamaguchi, Y., Masuma, R., Omura, S.	KIIM 2.6	1999	Beauveriolides, specific inhibitors of lipid droplet formation in mouse macrophages, produced by Beauveria sp. FO-6979. J Antibiot.(Tokyo) (52) 1-6 GLP: N, published: Y BVL No. 1690672	N	LIT
Namatame, I., Tomoda, H., Ishibashi, S., Omura, S.	KIIM 2.6	2004	Antiatherogenic activity of fungal beauveriolides, inhibitors of lipid droplet accumulation in macrophages. Proc Natl Acad Sci U.S A (101) 737-742 GLP: N, published: Y BVL No. 1690673	N	LIT

A.2 Biological properties of the micor-organism

Author(s)	Annex point/ reference number	Year	Title source (where different from company) report no. GLP or GEP status (where relevant), published or not BVL registration number	Data protection claimed  Y/N	Owner <sup>2</sup>
Norred, W.P., Plattner, R.D., Dombrink-Kurtzman, M.A., Meredith, F.I., Riley, R.T.	KIIM 2.6	1997	Mycotoxin-induced elevation of free sphingoid bases in precision-cut rat liver slices: specificity of the response and structure-activity relationships. Toxicol Appl Pharmacol (147) 63-70 GLP: N, published: Y BVL No. 1690674	N	LIT
Ohshiro, T., Namatame, I., Nagai, K., Sekiguchi, T., Doi, T., Takahashi, T., Akasaka, K., Rudel, L.L., Tomoda, H., Omura, S.	KIIM 2.6	2006	Absolute stereochemistry of fungal beauveriolide III and ACAT inhibitory activity of four stereoisomers. J Org Chem (71) 7643-7649 GLP: N, published: Y BVL No. 1690676	N	LIT
Ohshiro, T., Namatame, I., Nagai, K., Sekiguchi, T., Doi, T., Takahashi, T., Akasaka, K., Rudel, L.L., Tomoda, H., Omura, S.	KIIM 2.6	2006	Erratum to "Absolute stereochemistry of fungal beauveriolide III and ACAT inhibitory activity of four stereoisomers". J Org Chem (71) 9252 GLP: N, published: Y BVL No. 1690677	N	LIT
Ohshiro, T., Rudel, L.L., Omura, S., Tomoda, H.	KIIM 2.6	2007	Selectivity of microbial acyl-CoA: cholesterol acyltransferase inhibitors toward isozymes. J Antibiot.(Tokyo) (60) 43-51 GLP: N, published: Y BVL No. 1690681	N	LIT
Ojcius, D.M., Zychlinsky, A., Zheng, L.M., Young, J.D.	KIIM 2.6	1991	Ionophore-induced apoptosis: role of DNA fragmentation and calcium fluxes. Exp Cell Res (197) 43-49 GLP: N, published: Y BVL No. 1690685	N	LIT
Pegram, R.A., Wyatt, R.D.	KIIM 2.6	1979	Effect of dietary oosporein on broiler chicks. Poult.Sci (58) 1092 BVL No. 1690688	N	LIT
Pegram, R.A., Wyatt, R.D.	KIIM 2.6	1981	Avian gout caused by oosporein, a mycotoxin produced by Caetomium trilaterale. Poult.Sci (60) 2429-2440 GLP: N, published: Y BVL No. 1690689	N	LIT
Pegram, R.A., Wyatt, R.D., Smith, T.L.	KIIM 2.6	1982	Oosporein-toxicosis in the turkey poult. Avian Dis (26) 47-59 GLP: N, published: Y BVL No. 1690691	N	LIT



Author(s)	Annex point/ reference number	Year	Title source (where different from company) report no. GLP or GEP status (where relevant), published or not BVL registration number	Data protection claimed  Y/N	Owner <sup>2</sup>
Prince, R.C., Crofts, A.R., Steinrauf, L.K.	KIIM 2.6	1974	A comparison of beauvericin, enniatin and valinomycin as calcium transporting agents in liposomes and chromatophores. Biochem Biophys Res Commun (59) 697-703 GLP: N, published: Y BVL No. 1690693	N	LIT
Que, F.G., Go- res, G.J., La- Russo, N.F.	KIIM 2.6	1997	Development and initial application of an in vitro model of apoptosis in rodent cholangio-cytes. Am J Physiol (272) G106-G115 GLP: N, published: Y BVL No. 1690694	N	LIT
Roeske, R.W., Isaac, S., King, T.E., Steinrauf, L.K.	KIIM 2.6	1974	The binding of barium and calcium ions by the antibiotic beauvericin. Biochem Biophys Res Commun (57) 554-561 GLP: N, published: Y BVL No. 1690696	N	LIT
Strasser, H., Vey, A., Butt, T.M.	KIIM 2.6	2000	Are there any risks in using entomopathogenic fungi for pest control, with particular reference to the bioactive metabolites of <i>Metarhizium</i> , <i>Tolypocladium</i> and <i>Beauveria</i> species? Biocontrol Science and Technology (10) 717-735 GLP: N, published: Y BVL No. 1690697	N	LIT
Suzuki, A., Kanaoka, M., Isogai, A., Mu- rakoshi, S., Ichinoe, M., Tamura, S.	KIIM 2.6	1977	Bassianolide - New Insecticidal Cyclodepsi-peptide from <i>Beauveria-Bassiana</i> and <i>Verticillium-Lecanii</i> . Tetrahedron Letters (25) 2167-2170 GLP: N, published: Y BVL No. 1690698	N	LIT
Tang, C.Y., Chen, Y.W., Jow, G.M., Chou, C.J., Jeng, C.J.	KIIM 2.6	2005	Beauvericin activates Ca <sup>2+</sup> -activated Cl <sup>-</sup> currents and induces cell deaths in <i>Xenopus</i> oocytes via influx of extracellular Ca <sup>2+</sup> . Chem Res Toxicol (18) 825-833 GLP: N, published: Y BVL No. 1690699	N	LIT
Taniguchi, M., Kawaguchi, T., Tanaka, T., Oi, S.	KIIM 2.6	1984	Antimicrobial and Respiration-Inhibitory Activities of Oosporein. Agricultural and Biological Chemistry (48) 1065-1067 GLP: N, published: Y BVL No. 1690701	N	LIT

A.2 Biological properties of the micor-organism

Author(s)	Annex point/ reference number	Year	Title source (where different from company) report no. GLP or GEP status (where relevant), published or not BVL registration number	Data protection claimed  Y/N	Owner <sup>2</sup>
Tomoda, H., Huang, X.H., Cao, J., Nishida, H., Nagao, R., Okuda, S., Ta- naka, H., Omu- ra, S., Arai, H., Inoue, K	KIIM 2.6	1992	Inhibition of acyl-CoA: cholesterol acyltransfe- rase activity by cyclodepsipeptide antibiotics. J Antibiot.(Tokyo) (45) 1626-1632 GLP: N, published: Y BVL No. 1690702	N	LIT
Wu, S.N., Chen, H., Liu, Y.C., Chiang, H.T.	KIIM 2.6	2002	Block of L-type Ca <sup>2+</sup> current by beauvericin, a toxic cyclopeptide, in the NG108-15 neuronal cell line. Chem Res Toxicol (15) 854-860 GLP: N, published: Y BVL No. 1690703	N	LIT
Zhan, J., Burns, A.M., Liu, M.X., Faeth, S.H., Gunatila- ka, A.A.	KIIM 2.6	2007	Search for cell motility and angiogenesis inhi- bitors with potential anticancer activity: beau- vericin and other constituents of two endophy- tic strains of <i>Fusarium oxysporum</i> . J Nat Prod (70) 227-232 GLP: N, published: Y BVL No. 1690706	N	LIT
Kikuchi, H.; Takashani, N.; Oshima, Y.	KIIM 2.7.2 (OECD)	2004	Novel aromatics bearing 4-O-methylglucose unit isolated from the oriental crude drug <i>bombyx batryticatus</i> Tetrahedron Letters 45, 367-370 GLP: N, published: Y 1678051 /	N	LIT
Länge, T.	KIIM 2.7.2 (OECD)	2007	A biocontrol agent with more than 100 years of history of safe use Agriculture and Agri_Food Canada , GLP: N, published: Y 1678002 /	N	LIT
Laverlam International Corp	KIIM 2.12 (OECD)	1999	BotaniGard 22 WP: Fungicide compability GLP: N, published: N 1678063 /	N	MEU
Quesada- Moraga, E.; Vey, A.	KIIM 2.7.2 (OECD) IIM 2.6	2004	Bassiacridin, a protein toxic for locusts secreted by the entomopathogenic fungus <i>Beauveria bassiana</i> Mycol.Res. 108 (4) , 441-452 GLP: N, published: Y 1690695	N	LIT

A.2 Biological properties of the micor-organism

Author(s)	Annex point/ reference number	Year	Title source (where different from company) report no. GLP or GEP status (where relevant), published or not BVL registration number	Data protection claimed  Y/N	Owner <sup>2</sup>
Quesada-Moraga, E.; Vey, A.	KIIM 2.7.2 (OECD)	2003	Intra-specific variation in virulence and in vitro production of macromolecular toxins active against locust among <i>Beauveria bassiana</i> strains and effects of in vivo and in vitro passage on these factors Biocontrol Science and Technology 13, 323-340 GLP: N, published: Y 1678004 /	N	LIT
Seger, C.; Erlebach, D.; Stuppner, H.; Griesser, U.; Strasser, H.	KIIM 2.7.2 (OECD)	2005	Physicochemical properties of oosporein, the major secreted metabolite of the entomopathogenic fungus beauveria brongniartii Helvetica Chimica Acta 88, 802-810 GLP: N, published: Y 1678001 /	N	LIT
Strasser, H.; Vey, A. and Butt, T.M.	KIIM 2.6 (OECD) IIM 2.7.2	2000	Are there any Risks in using Entomopathogenic Fungi for pest Control, with Particular Reference to the Bioactive Metabolites of Metarhizium, Tolypocladium and Beauveria species? Biocontrol Science and Technology (10) , 717-735 N/a GLP: N, published: Y 1300945 / BWS2006-66	N	LIT
Strasser, H.; Vey, A. and Butt, T.M.	KIIM 2.7.2 (OECD)	1993	Are there any Risks in using Entomopathogenic Fungi for pest Control, with Particular Reference to the Bioactive Metabolites of Metarhizium, Tolypocladium and Beauveria species? N/a GLP: O, published: N 1300946 / BWS2006-66	N	MEU
Wat, C.; McInnes, A.G.; Smith, D.	KIIM 2.7.2 (OECD)	1977	The yellow pigments of beauveria species. Structures of tenellin and bassianin J. Chem 55, 4090-4098 GLP: N, published: Y 1678006 /	N	LIT

A.2 Biological properties of the micor-organism

Author(s)	Annex point/ reference number	Year	Title source (where different from company) report no. GLP or GEP status (where relevant), published or not BVL registration number	Data protection claimed  Y/N	Owner <sup>2</sup>
Zimmermann, G.	KIIM 2.2 (OECD) KIIM 2.4 KIIM 2.6 KIIM 2.8 KIIM 2.7.2	2007	Review on safety of the entomopathogenic fungi <i>Beauveria bassiana</i> and <i>Beauveria</i> <i>brongiarthii</i> Biocontrol Science and Technology 17 (5/6), 553-596 GLP: N, published: Y 1673970 /	N	LIT

**Codes of owner**

LAM Laverlam International Corporation  
LIT Literature  
MEU Mycotech Europe Ltd.

A.3 Further information

**A.3 Further information (OECD IIM 3; OECD IIIM 3 and 4)**

Author(s)	Annex point/ reference number	Year	Title source (where different from company) report no. GLP or GEP status (where relevant), published or not BVL registration number	Data protection claimed  Y/N	Owner <sup>3</sup>
Anonymous	KIIM 3.7 (OECD)	2005	MSDS: <i>Beauveria bassiana</i> strain GHA GLP: N, published: N 1300951 / CHE2006-583	Y	MEU

**Codes of owner**

LAM Laverlam International Corporation

LIT Literature

MEU Mycotech Europe Ltd.

<sup>3</sup> Only notifier listed

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## **A.4 Classification, packaging and labelling**

No references submitted.

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## A.5 Analytical methods (OECD IIM 4; OECD IIM 5)

Author(s)	Annex point/ reference number	Year	Title source (where different from company) report no. GLP or GEP status (where relevant), published or not BVL registration number	Data protection claimed  Y/N	Owner <sup>4</sup>
Anonymous	KIIM1 5.2 (OECD)	2000	Effect of temperature on the Shelf - life of BotaniGard emulsionsfiable suspension (code ES9601) and Botani Gard 22 WP (Code WP9616B) N/A GLP: Y, published: N 1301016 / CHE2006-770	Y	LAM
Barbera, P.W.	KIIM 4.5.3 (OECD)	1993	Sensitivity of Detection of <i>Beauveria bassiana</i> strain GHA for toxicity/ pathogenicity testing in rats IIT research Institute, Life Sciences L08433 GLP: Y, published: N 1300971 / MET2006-304	Y	LAM
Becerra, M.A.	KIIM 4.3.5 (OECD)	1995	Extraction procedure SOP # 3.8 GLP: N, published: N 1300963 / CHE2006-767	Y	LAM
Bradley, C.	KIIM1 5.3 (OECD)	1998	Minjor Modifications to Manufacturing Process for Mycotrol TGAI and End Product Formulation N/A GLP: N, published: N 1301017 / CHE2006-769	Y	LAM
Castrillo, L.A. Vandenberg, J.D., Wraight, S.P.	KIIM 4.1 (OECD)	2003	Strain-specific detection of introduced <i>Beauveria bassiana</i> in agricultural fields by use of sequence-characterized amplified region markers Journal of Invertebrate Pathology 82, 75-83 GLP: N, published: N 1675896	Y	LIT
Collins, M.K.	KIIM 4.5.5 (OECD)	1993	<i>Beauveria bassiana</i> (Bb GHA 1991) 21-day toxicity to Daphnids ( <i>Daphnia magna</i> ) under static renewal conditions 93-7-4883 GLP: Y, published: N 1300973 / MET2006-306	Y	LAM
Grace, J.	KIIM 4.5.4 (OECD)	1997	Standard operating procedure for the analysis of <i>Beauveria bassiana</i> in soil SOP # 13.1 GLP: N, published: N 1300972 / MET2006-305	Y	LAM

<sup>4</sup> Only notifier listed

A.5 Methods of analysis

Author(s)	Annex point/ reference number	Year	Title source (where different from company) report no. GLP or GEP status (where relevant), published or not BVL registration number	Data protection claimed  Y/N	Owner <sup>4</sup>
Jaronski, S.T.; Butler, E.; Kahler, A.	KIIM 4.2 (OECD)	1993	<i>Beauveria bassiana</i> strain GHA cDNA library construction and RFLP analysis R145-93/003 GLP: N, published: N 1300920 / BWS2006-54	Y	LAM
Jaronski S.T.	KIIM 4.4 (OECD)	1993	TGAI Physical stability study of <i>Beauveria bassiana</i> strain GHA: sunlight effects. 93-001 GLP: Y, published: N 1300969 / CHE2006-765	Y	LAM
Jaronski, S.T.	KIIM 4.3.1 (OECD) KIIIM1 5.2	1993	Fungal spore counts (SOP #03-02; Edition #02) N/A GLP: N, published: N 1300960 / CHE2006-757	Y	LAM
Jaronski, S.T.	KIIM 4.3.2 (OECD)	1993	Characterisation of <i>Beauveria bassiana</i> (SOP #3.5; Edition #01) and Including Sample Characterisations N/A GLP: N, published: N 1300961 / CHE2006-750	Y	LAM
Jaronski, S.T.	KIIM 4.3.5 (OECD)	1993	Analysis of GH TGAI ( <i>Beauveria bassiana</i> strain) for the metabolite Oosporein 93-032 GLP: N, published: N 1300965 / CHE2006-753	Y	LAM
Jaronski, S.T.	KIIM 4.3.6 (OECD)	1993	Enumeration of Microbial Contaminants in <i>Beauveria bassiana</i> TGAI (03-06; Edition 01) 5 GLP: O, published: N 1300966 / CHE2006-784	Y	MEU
Jaronski, S.T.	KIIM 4.4 (OECD)	1993	TGAI Physican stability study of <i>Beauveria bassiana</i> strain GHA: temperature extremes 93-002 GLP: N, published: N 1300968 / CHE2006-755	Y	LAM
Jaronski, S.T.	KIIIM1 5.2 (OECD)	1993	Fungal spore viability test (SOP #03-03-02; Edition #02) N/A GLP: N, published: N 1301015 / CHE2007-389	Y	LAM
Jaronski, S.T.; Becarra M.; Sears, J.	KIIM 4.3.5 (OECD)	1995	Analysis of Mycotrol GH TGAI ( <i>Beauveria bassiana</i> strain GHA Conditional Powders) for the metabolites Beauvericin and Bassianolide 94-009 GLP: N, published: N 1300964 / CHE2006-752	Y	LAM

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A.5 Methods of analysis

Author(s)	Annex point/ reference number	Year	Title source (where different from company) report no. GLP or GEP status (where relevant), published or not BVL registration number	Data protection claimed  Y/N	Owner <sup>4</sup>
Jaronski, S.T. and Britton, J.A.	KIIM 4.4 (OECD)	1993	Effect of pH and metal ions on <i>Beauveria bassiana</i> strain GHA in aqueous suspension 93-025 GLP: Y, published: N 1300967 / CHE2006-766	Y	LAM
Lord, J.C.	KIIM 4.5.1 (OECD)	1995	Quantification of spores per unit area on leaf surfaces SOP # 01-08 GLP: Y, published: N 1300970 / MET2006-303	Y	LAM

**Codes of owner**

LAM Laverlam International Corporation

LIT Literature

MEU Mycotech Europe Ltd.

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## A.6 Effects on human health (OECD IIM 5; OECD IIIM 7)

Author(s)	Annex point/ reference number	Year	Title source (where different from company) report no. GLP or GEP status (where relevant), published or not BVL registration number	Data protection claimed  Y/N	Owner <sup>5</sup>
Arcelin, G.	KIIM 5.3.1 (OECD) KIIIM1 7.1.6	2006	Botanigard 22WP: Contact hypersensitivity in albino guinea pigs, Bühler test A38575 GLP: Y, published: N 1679375 /	Y	MEU
Barbera, P. W.	KIIM 5.3.4 (OECD)	1993	Toxicity/pathogenicity testing of <i>Beauveria bassiana</i> strain GHA Following acute intraperitoneal challenge in rats L08433 SN5 GLP: Y, published: N 1300910 / TOX2006-873	Y	LAM
Barbera, P. W.;	KIIM 5.3.2 (OECD)	1993	Toxicity/pathogenicity testing of <i>Beauveria bassiana</i> strain GHA Following acute oral challenge in rats L08433 SN6 GLP: Y, published: N 1300907 / TOX2006-871	Y	LAM
Barbera, P. W.;	KIIM 5.3.3 (OECD)	1993	Pulmonary toxicity/pathogenicity testing of <i>Beauveria bassiana</i> strain GHA Following acute intratracheal challenge in rats L08433 SN4 GLP: Y, published: N 1300908 / TOX2006-872	Y	LAM
Beaumont, F., Kauffmann, H.F., Demonchy, J.G.R., Sluiter, H.J., Devries, K.	KIIM 5.1 (OECD) KII 5.2	1985	Volumetric aerobiological Survey of Conidial Fungi in the Northeast Netherlands. 1. Comparison of Aerobiological data and Skin-Tests with Mold Extracts in an Asthmatic Population. Allergy 40, 181-186 GLP: O, published: Y 1300975 / TOX2007-470	N	LIT
Bradley, C.	KIIM 5.2 (OECD)	1993	Discussion of formation of unintentional ingredients. GLP: O, published: N 1300905 / TOX2006-898	Y	LAM
Chatriand, G.	KIIM 5.2 (OECD)	1900	Summary of work-related injuries and illnesses, OSHA's Form 300A - Year 2000-2004. GLP: N, published: N 1300904 / TOX2006-901	Y	LAM

<sup>5</sup> Only notifier listed

Author(s)	Annex point/ reference number	Year	Title source (where different from company) report no. GLP or GEP status (where relevant), published or not BVL registration number	Data protection claimed  Y/N	Owner <sup>5</sup>
Findlay, J.	KIIM 5.3.1 (OECD)	1998	Dermal sensitization study of <i>Beauveria bassiana</i> strain GHA in guinea pigs using the Buehler method L08608 SN30 GLP: Y, published: N 1300906 / TOX2006-870	Y	LAM
Findlay, J.	KIIM1 7.1.4 (OECD)	1999	Acute dermal irritation study of Mycotrol Botani Gard 22WP in rabbits 8608 SN32 GLP: Y, published: N 1301040 / TOX2006-876	Y	LAM
Fotso, J., Smith, J.S.	KIIM 5.3 (OECD)	2003	Evaluation of beauvericin toxicity with the bacterial bioluminescence assay and the ames mutagenicity bioassay Journal of Food Science 68, 1938-1941 GLP: O, published: Y 1689977 / ASB2007-4562	N	LIT
Fuguet, R. and Vey, A.	KIIM 5.1 (OECD)	2004	Comparative analysis of the production of insecticidal and melanizing macromolecules by strains of <i>Beauveria</i> spp.: in vivo studies. J Invertebr. Pathol. 85, 152-167 GLP: O, published: Y 1300974 / TOX2007-483	N	LIT
Fromtling, R.A., Kosanke, S.D., jensen, J.M., Bulmer, G.S.	KIIM 5.3 (OECD)	1979	Fatal <i>Beauveria bassiana</i> infection in a captive American alligator. J Am Vet Med Assoc 175, 934-936 GLP: O, published: Y 1300988 / TOX2007-472	N	LIT
Gürçan, S., Tugrul, H.M., Yörük, Y., Özer, B., Tatman-Otkun, M., Otkun, M.	KIIM 5.2 (OECD)	2006	First case report of empyema caused by <i>Beauveria bassiana</i> . Mycoses 49, 246-248 GLP: O, published: Y 1300987 / TOX2007-473	N	LIT
Henke, M.O., de Hoog, G.S., Gross, U., Zimmermann, G., Kraemer, D., Weig, M.	KIIM 5.2 (OECD)	2002	Human deep tissue infection with an entomopathogenic <i>Beauveria</i> species. J Clin Microbiol 40, 2698-2702 40, 2698-2702 GLP: N, published: Y 1300986 / TOX2006-2716	N	LIT
Ishibashi, Y., Kaufman, H.E., Ichinoe, M., Kagawa, S.	KIIM 5.2 (OECD)	1987	The Pathogenicity of <i>Beauveria bassiana</i> in the Rabbit Cornea. Mycosen 30, 115-126 GLP: O, published: Y 1300985 / TOX2007-474	O	MEU

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Ishibashi, Y., Matsumoto, Y., Takei, K.	KIIM 5.1 (OECD)	1984	The effects of intravenous miconazole on fungal keratitis Am. J. Ophthalmol. 98, 323-330 GLP: O, published: Y 1689978 / ASB2007-4606	N	LIT
Johnson, W. D.	KIIM 5.5 (OECD)	1993	Acute dermal toxicity study of <i>Beauveria</i> <i>bassiana</i> GHA in rabbits L08433 SN3 GLP: Y, published: N 1300909 / TOX2006-874	Y	LAM
Johnson, W. D.	KIIM1 7.1.1 (OECD)	1997	Acute oral toxicity study of Mycotrol WP96116b in rats (Limit test) L08608 No15 GLP: Y, published: N 1301039 / TOX2006-875	Y	LAM
Johnson, W. D.	KIIM1 7.1.5 (OECD)	1997	Primary eye irritation study of Mycotrol WP9616b in rabbits, L08608 GLP: Y, published: N 1301041 / TOX2006-877	Y	LAM
Kisla, T.A., Cu- Unjieng, A., Sigler, L., Sugar, J.	KIIM 5.2 (OECD)	2000	Medical management of <i>Beauveria bassiana</i> keratitis. Cornea 19, 405-406 GLP: O, published: Y 1300984 / TOX2007-475	N	LIT
Kroes, R., Galli, C., Munro, I., Schilter, B., Tran, L., Walker, R., Wurtzen, G.	KIIM 5.4 (OECD)	2000	Threshold of toxicological concern for chemical substances present in the diet: a practical tool for assessing the need for toxicity testing Food Chem Toxicol 38, 255-312 GLP: O, published: Y 1689981 / ASB2007-4781	N	LIT
Kennepohl, E., Kroes, R., Munro, I.C.	KIIM 5.4 (OECD)	1999	Procedure for the safety evaluation of flavouring substances. Joint FAO/WHO expert committee on food additives Food Chem Toxicol 37, 207-232 GLP: O, published: Y 1689983 / ASB2007-4782	N	LIT

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Kroes, R., Renwick, A.G., Cheeseman, M., Kleiner, J., Mangelsdorf, I., Piersma, A., Schilter, B., Schlatter, J., van Schothorst, F., Vos, J.G., Wurtzen, G.	KIIM 5.4 (OECD)	2004	Structure-based thresholds of toxicological concern (TTC): guidance for application to substances present at low levels in the diet Food Chem Toxicol 42, 65-83 GLP: O, published: Y 1689982 / ASB2007-4780	N	LIT
Lackner, A., Freudenschuss, K., Buzina, W., Stammberger, H., Panzitt, T., Schosteritsch, S., Braun, H.	KIIM 5.2 (OECD)	2004	From when on can fungi be identified in nasal mucus of humans? Laryngorhinootologie 83, 117-121 GLP: O, published: Y 1300983 / TOX2007-476	N	LIT
Low, C.D.T., Badenoch, P.R., Coster, D.J.	KIIM 5.2 (OECD)	1997	<i>Beauveria bassiana</i> keratitis cured by deep lamellar dissection. Cornea 16, 698-699 GLP: O, published: Y 1300982 / TOX2007-477	N	LIT
Melnikova, E.A., Murza, V.I.	KIIM 5.3 (OECD)	1980	Investigation of the safety of industrial strains of microorganisms and microbial insecticides. J Hyg Epidemiol Microbiol Immunol 24, 425-431 GLP: O, published: Y 1300990 / TOX2007-478	N	LIT
Pemberton, R.W.	KIIM 5.2 (OECD)	1999	Insects and other arthropods used as drugs in Korean traditional medicine. J Ethnopharmacol. 65, 207-216 GLP: O, published: Y 1300981 / TOX2007-479	N	LIT
Richardson, L.E., Begley, C.G., Keck, G.C.	KIIM 5.1 (OECD)	1993	Comparative efficacies of soft contact lens disinfection systems against a fungal contaminant J. Am. Optom. Assoc. 64, 210-214 GLP: O, published: Y 1689979 / ASB2007-4607	N	LIT
Sachs, S.W., Baum, J., Mies, C.	KIIM 5.1 (OECD)	1985	<i>Beauveria bassiana</i> keratitis Brit. J. Ophthalmol. 69, 548-550 GLP: O, published: Y 1689980 / ASB2007-4608	N	LIT

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Semalulu, S.S., MacPherson, J.M., Schiefer, H.B., Khachatourians, G.G.	KIIM 5.1 (OECD) KIIM 5.2	1992	Pathogenicity of <i>Beauveria bassiana</i> in mice. Zentralbl. Veterinarmed. B 39, 81-90 GLP: O, published: Y 1300976 / TOX2007-480	N	LIT
Sokolowski, A., Völkner, W.	KIIM 5.3.5 (OECD)	2006	Salmonella typhimurium and escherichia coli reverse mutation assay with <i>Beauveria bassiana</i> strain GHA conida spores 923900 GLP: Y, published: N 1679372 /	Y	MEU
Song, J.Y.	KIIM 5.3 (OECD)	1989	Experimental study on farmers lung-like lesions caused by <i>Beauveria bassiana</i> . Zhonghua Bing. Li Xue Za Zhi. 18, 111-114 GLP: O, published: Y 1300989 / TOX2007-481	N	LIT
Tucker, D.L., Beresford, C.H., Sigler, L. Rogers, K.	KIIM 5.2 (OECD)	1900	Disseminated <i>Beauveria bassiana</i> infection in a patient with acute lymphoblastic leukemia. J Clin Microbiol. 42, 5412-5414 42, 5412-5414 GLP: N, published: Y 1300979 / TOX2006-2723	N	LIT
Westwood, G.S., Huang, S.W., Keyhani, N.O.	KIIM 5.2 (OECD)	2005	Allergens of the entomopathogenic fungus <i>Beauveria bassiana</i> . Clin Mol Allergy 3, 1 GLP: O, published: Y 1300978 / TOX2007-482	N	LIT
Zimmermann, G.	KIIM 5.4 (OECD)	2007	Review on safety of the entomopathogenic fungi <i>Beauveria bassiana</i> and beauveria brongniartii Biocontrol science and technology 17, 555-596 GLP: O, published: Y 1689994 / ASB2007-4783	N	LIT

#### Codes of owner

LAM Laverlam International Corporation

LIT Literature

MEU Mycotech Europe Ltd.

A.7 Residue data

**A.7 Residue data (OECD IIM 6; OECD IIM 8)**

Author(s)	Annex point/ reference number	Year	Title source (where different from company) report no. GLP or GEP status (where relevant), published or not BVL registration number	Data protection claimed  Y/N	Owner <sup>6</sup>
Anonymous	KIIM1 8 (OECD)	2000	<i>Beauveria bassiana</i> strain GHA (128924) technical document 128924 GLP: Y, published: N 1679406 /	Y	MEU
Edgington, S., Segura, H.; De la Rosa, W., Trevor, W.	OECD KIIM... (B.7.2.2)	2000	Photoprotection of <i>Beauveria bassiana</i> : testing simple formulations for control of the coffee berry borer International Journal of Pest Management 46 (3), (2000), 169-176 BNWS...	N	LIT
Fargues, J. et al.	KIIM 6.3 (OECD)	1997	Effect of temperature on vegetative growth of <i>Beauveria bassiana</i> isolates from different origins. Institut National de la Recherche Agronomique, Versailles, France 89, 383-392 GLP: N, published: Y 1690318 / BWS2006-65	N	LIT
Ignoffo, C.M., Garcia, C.	OECD KIIM.. (B.7.2.2)	1992	Influence of conidial color on inactivation of several entomogenous fungi (Hyphomycetes) by simulated sunlight. Env. Ent. 21 : 913-917 Report-No. not applicable GLP: no Published: yes BWS...	N	LIT
Inglis, G. D., Goettel, M. S. and John- son, D. L.	OECD KIIM7.1 and KIIM9	1995	Influence of ultraviolet light protectants on persistence of the entomopathogenic fungus, <i>Beauveria bassiana</i> Biological Control 5, (1995), 581-590 Report-No. not applicable GLP: no Published: yes BOD2006-319	N	LIT
Jaronski, S.T.	KIIM 6.3 (OECD)	1993	TGAI Physical stability study of <i>Beauveria bassiana</i> strain GHA: sunlight effects. 93-001 GLP: Y, published: N 1690316 / BWS2006-62	Y	LAM

<sup>6</sup> Only notifier listed

A.7 Residue data

Author(s)	Annex point/ reference number	Year	Title source (where different from company) report no. GLP or GEP status (where relevant), published or not BVL registration number	Data protection claimed  Y/N	Owner <sup>6</sup>
Jaronski, S.T.	OECD KIIM2.8	1993	TGAI Physical stability study of <i>Beauveria bassiana</i> strain GHA: sunlight effects. Report-No. 93-001 GLP: no Published: no BWS2006-67	Y	LAM
Jaronski, S.T., Becerra, M., Sears, J.	KIIM 6.1 (OECD)	1999	Analysis of Mycotrol/BotaniGard TGAI ( <i>Beauveria bassiana</i> strain GHA Conidial Powers) for the metabolites Beauvericin and bassianolide. 98-06 GLP: Y, published: N 1679387 / CHE2006-752	Y	MEU
Strasser, H.; Vey, A. and Butt, T.M.	KIIM 6.1 (OECD)	2000	Are there any Risks in using Entomopathogenic Fungi for pest Control, with Particular Reference to the Bioactive Metabolites of <i>Metarhizium</i> , <i>Tolypocladium</i> and <i>Beauveria</i> species? N/a GLP: O, published: N 1690320 / BWS2006-66	O	MEU

**Codes of owner**

LAM Laverlam International Corporation

LIT Literature

MEU Mycotech Europe Ltd.

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## A.8 Environmental fate and behaviour (OECD IIM 7; OECD IIM 9)

Author(s)	Annex point/ reference number	Year	Title source (where different from company) report no. GLP or GEP status (where relevant), published or not BVL registration number	Data protection claimed  Y/N	Owner <sup>7</sup>
Campbell, R.	KIIM 7 (OECD)	1981	Mikrobielle Ökologie Verlag Chemie GmbH, Weinheim pages 117,118,190 GLP: N, published: Y		
Gardner, W.A., Sutton, R.M. and Noblet, R.	KIIM 7.1 (OECD)	1977	Persistence of <i>Beauveria bassiana</i> , <i>Nomuraea rileyi</i> , and <i>Nosema necatrix</i> on soybean foliage. Environmental Entomology 6:6161-618.		
Inglis, G. D., Goettel, M. S. and Johnson, D. L.	KIIM 7.1 (OECD) KIIIM1 9 (OECD)	1995	Influence of ultraviolet light protectants on persistence of the entomopathogenic fungus, <i>Beauveria bassiana</i> Biological control 5, 581-590 01094 R GLP: N, published: Y 1300992 / BOD2006-319	N	MEU
Jaronski S.T.	KIIM 7.1.3 (OECD)	1993	TGAI Physical stability study of <i>Beauveria bassiana</i> strain GHA: sunlight effects. 93-001 GLP: Y, published: N 1689949 / CHE2006-765 /CHE2006-755	Y	LAM
Jaronski, S. T. and Britton, J. A.	KIIM 7.1.2 (OECD)	1993	Effect of pH and metal ions on <i>Beauveria bassiana</i> strain GHA in aqueous suspension 93-025 GLP: N, published: N 1300994 / WAS2006-143	Y	MEU
Krygsman, A.	KIIM 7.1 (OECD)	1993	Effects of Naturalis-L bio-insecticide on beneficial insects during the 1992 experimental use permit season FERM.ENVFA EUP-1 GLP: N, published: N 1639820 / BOD2006-251	N	ACE
Krygsman, A.	KIIM 7.1 (OECD) KIIIM1 10.4	1994	Fermone Naturalis-L 225 monitoring studies during the 1993 experimental use permit season KIIM 10.4/02 GLP: N, published: N 1689943 / ANA2006-143	N	ACE

<sup>7</sup> Only notifier listed

Author(s)	Annex point/ reference number	Year	Title source (where different from company) report no. GLP or GEP status (where relevant), published or not BVL registration number	Data protection claimed  Y/N	Owner <sup>7</sup>
Storey, G. K. and Gardner W. A.	KIIM 7.1.1 (OECD) KIIIM1 9 (OECD)	1988	Movement of an aqueous spray of <i>Beauveria bassiana</i> into the profile of four Georgia soils Entomological society of America 17, 135-139 GLP: N, published: Y 1300993 / BOD2006-320	N	MEU
Wright, J.	KIIM 7.1 (OECD)	1993	Determination of <i>Beauveria bassiana</i> ATCC 74040 in soil and on foliage GLP: N, published: N 1639821 / BOD2006-252	N	ACE
Zimmermann, G.	KIIM 7 (OECD)	2007	Review on safety of the entomopathogenic fungi <i>Beauveria bassiana</i> and <i>Beauveria brongniartii</i> . Biocontrol Science and Technology , Volume 17, Issue 6: 553-598 GLP: N, published: Y		

#### Codes of owner

ACE Agrichem S. A.  
LAM Laverlam International Corporation  
LIT Literature  
MEU Mycotech Europe Ltd.

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## A.9 Ecotoxicology (OECD IIM 8; OECD IIM 10)

Author(s)	Annex point/ reference number	Year	Title source (where different from company) report no. GLP or GEP status (where relevant), published or not BVL registration number	Data protection claimed  Y/N	Owner <sup>8</sup>
Aldershof, S.	KIIM1 10.4 (OECD)	2000	BotaniGard: An extended laboratory test to determine effects of two formulations of <i>Beauveria bassiana</i> on the minute pirate bug <i>Orius laevigatus</i> MT003OLE GLP: Y, published: N 1301022 / ANA2006-209	Y	MEU
Aldershof, S.	KIIM1 10.4 (OECD)	2000	BotaniGard: An extended laboratory test to determine effects of two formulations of <i>Beauveria bassiana</i> on the parasitic wasp <i>Aphidius rhopalosiphii</i> (DeStefani-Perez) MT002ARE GLP: Y, published: N 1301023 / ANA2006-208	Y	MEU
Aldershof, S.	KIIM1 10.4 (OECD)	2000	BotaniGard: An extended laboratory test to determine effects of two formulations of <i>Beauveria bassiana</i> on the predatory mite <i>Typhlodromus pyri</i> (DeStefani-Perez) MT001TPE GLP: Y, published: N 1301024 / ANA2006-207	Y	MEU
Brinkman, M.A. Fuller, B.W.	KIIM 8.8.4 (OECD) KIIM1 10.4 (OECD)	1999	Influence of <i>Beauveria bassiana</i> strain GHA on nontarget rangeland arthropod populations Environmental Entomology 28, 863-867 GLP: N, published: Y 1679474 /	N	LIT
Bromenshenk, J.J. et al.	KIIM 8.7 (OECD)	1996	Multiple endpoint, holistic assessment of the effects of Mycotrol WP ( <i>Beauveria bassiana</i> strain GHA) on outdoor <i>Apis mellifera</i> L. colonies Study No. 95-05 GLP: N, published: N 1301000 / BIE2006-88	Y	MEU
Campbell, R.	KIIM 8 (OECD)	1981	Mikrobielle Ökologie Verlag Chemie GmbH, Weinheim page 190 GLP: N, published: Y	N	LIT

<sup>8</sup> Only notifier listed

Author(s)	Annex point/ reference number	Year	Title source (where different from company) report no. GLP or GEP status (where relevant), published or not BVL registration number	Data protection claimed  Y/N	Owner <sup>8</sup>
Collins, M. K.	KIIM 8.3 (OECD)	1993	<i>Beauveria bassiana</i> (Bb GHA 1991) - 21- day toxicity to daphnids ( <i>Daphnia magna</i> ) under static renewal conditions 93-7-4883 GLP: Y, published: N 1300998 / WAT2006-387	Y	MEU
Collins, M.K.	KIIM 8.2 (OECD)	1993	<i>Beauveria bassiana</i> - evaluation of potential embryo larval toxicity and pathogenicity to fathead minnow ( <i>Pimephales promelas</i> ) under static renewal conditions 93-8-4910 GLP: Y, published: N 1300997 / WAT2006-386	Y	MEU
Duperchy, E.	KIIM 8.8	2003	Identification of up-regulated genes of the hyphomycete, <i>Beauveria bassiana</i> , during infection of <i>Leptinotarsa decemlineata</i> . Dis- sertation, Ruberto-Carola University of Hei- delberg, Germany	N	LIT
Fromtling, R.A., Kosanke, S.D., jensen, J.M., Bulmer, G.S.	KIIM 8.11 (OECD)	1979	Fatal <i>Beauveria bassiana</i> infection in a captive American alligator. J Am Vet Med Assoc 175, 934-936 GLP: N, published: Y 1690145 / TOX2007-472	N	MEU
Goettel, M. et al.	KIIM 8.9.2 (OECD)	1997	Effect of Beauveria bassians (Mycotech strain GHA) on invertebrates in rangeland and alfalfa agroecosystems Proj.No. 95-04 GLP: N, published: N 1301004 / ARW2006-100	Y	MEU
Hartmann, G. C. and Wasti, S. S.	KIIM 8.1 (OECD)	1980	Avian safety of three species of entomogenous fungi on Japanese quail Comp. Physiol. Ecol. 5, 242-245 154A-16 GLP: N, published: Y 1300996 / AVS2006-167	N	MEU
Havelka, P. and Ruge, K.	KIIM 8.8	1988	Auswirkungen der Bekämpfung des Waldmai- käfers ( <i>Melolontha hippocastani</i> F.) im Forst- bezirk Karlsruhe-Hardt auf die Avi-Fauna. Mitteilungen der Forstlichen Versuchs- und Forschungsanstalt Baden-Württemberg, Frei- burg/B. 132: 117-139. (In German).	N	LIT

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Hildreth, M. Jaronski, S.T.	KIIM 8.8 (OECD)	1993	Acute toxicity/pathogenicity of <i>Beauveria bassiana</i> strain GHA to <i>Tenebrio molitor</i> [Coleoptera: Tenebrionidae] Lab.Rep. 93-015 GLP: N, published: N 1535005 / ANA2006-204	N	MEU
Hokkanen, H.M.T., Zeng, Q-Q. and Menzler-Hokkanen, I..	KIIM 8.7	2003	Assessing the impacts of <i>Metarhizium</i> and <i>Beauveria</i> on bumblebees. In: Hokkanen HMT & Hajek AE (eds.) Environmental impacts of microbial insecticides, 63-72. Kluwer Academic Publishers. Published: Y	N	LIT
Hoogendoorn, G.	KIIM1 10.4 (OECD)	2000	BotaniGard: An extended laboratory test to determine effects of two formulations of <i>Beauveria bassiana</i> on spring generation spiders of the genus <i>Pardosa</i> MT004PSE GLP: Y, published: N 1301021 / ANA2006-210	Y	MEU
Hoxter, K.A. et al.	KIIM 8.9.1 (OECD)	1998	An acute toxicity study with the earthworm in an artificial soil substrate Proj.No. 488-101A GLP: Y, published: N 1301003 / ARW2006-99	Y	MEU
Jaronski, S.T. Dunkel, F.V.	KIIM 8.8 (OECD)	1993	Acute toxicity/pathogenicity of <i>Beauveria bassiana</i> strain GHA to predators/parasites: <i>Xylocoris flavipes</i> [Hemiptera: Anthrocoridae] Lab.Rep. 93-019 GLP: Y, published: N 1301001 / ANA2006-205	Y	MEU
Jaronski, S.T. et al.	KIIM 8.8 (OECD)	1996	Field evaluation of the effects of Mycotrol WP ( <i>Beauveria bassiana</i> strain GHA) on the whitefly parasite, <i>Eretmocerus</i> sp. [Hymenoptera: Aphelinidae] in commercial melons Proj.No. 95-006A GLP: N, published: N 1535004 / ANA2006-206	Y	MEU

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Johnson, D.L. et al.	KIIM 8.1 (OECD)	2002	Assessment of health and growth of ring-necked pheasants following consumption of infected insects or conidia of entomopathogenic fungus <i>Metarhizium anisopliae</i> var. <i>acridum</i> and <i>Beauveria bassiana</i> from Madagascar and North America. J. of Toxicology and Environmental Health, Part A 65, 2145-2162 GLP: N, published: Y 1679420 /	N	LIT
Madigan, M.T., Martinko, J.M., Parker, J.	KIIM 8.11	2001	Brock Mikrobiologie, Spektrum Akad. Verlag, Heidelberg: 430-432 GLP: N, published: Y	N	LIT
McEwen, L. C.	KIIM 8.1 (OECD)	1993	Response of young American kestrels ( <i>Falco sparverius</i> ) to <i>Beauveria bassiana</i> strain GHA 93-012 GLP: N, published: N 1300995 / AVS2006-168	Y	MEU
Mommaerts, V., Boulet, J., Sterk, G. and Smaghe, G.	KIIM 8.7	2007	Effects of biological control agents (BCAs) on pollinator, <i>Bombus terrestris</i> Not yet published.	—	—
Palmer, S. J. and Krueger, H. O.	KIIM 8.4 (OECD)	1998	<i>Beauveria bassiana</i> strain GHA: a 96-hour toxicity test with the freshwater alga <i>Selenastrum capricornutum</i> 488A-101 GLP: Y, published: N 1300999 / WAT2006-388	Y	MEU
Rautmann, D. et al.	KIIM1 9 (OECD)	2001	New spray drift values in the authorization procedure for plant protection products In: Forster et al.: Workshop on risk assessment and risk mitigation measures in the context of the authorisation of plant protection products; Mitt. Biol. Bundesanst. (Berlin-Dahlem), GLP: N, published: Y 1639813 / WAS2006-329	N	LIT
Strasser, H.; Vey, A. and Butt, T.M.	KIIM 8 (OECD)	2000	Are there any Risks in using Entomopathogenic Fungi for pest Control, with Particular Reference to the Bioactive Metabolites of <i>Metarhizium</i> , <i>Tolypocladium</i> and <i>Beauveria</i> species? N/a GLP: N, published: N 1689733 / BWS2006-66	N	MEU

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Zimmermann, G.	KIIM 8 (O- ECD)	2007	Review on safety of the entomopathogenic fungi <i>Beauveria bassiana</i> and <i>Beauveria brongniartii</i> . Biocontrol Science and Technology , Volume 17, Issue 6: 553-598 GLP: N, published. Y	N	LIT

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LIT Literature

MEU Mycotech Europe Ltd.

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