

**Suppl. Table S2.** Validation data set of *Metarhizium* strains and marker sequences. "M." abbreviates "Metarhizium".

Strain / Isolate	Previous Identification	Identification by			5TEF	rIGS-ID800	Geographic Origin	Original Host, Isolation Source	References
		diagnostic PCR	rIGS-ID800	5TEF					
ARSEF 2080	<i>M. anisopliae sensu stricto</i>	<i>M. anisopliae</i>	<i>M. anisopliae</i>	<i>M. anisopliae</i>	KX342700	OR400501	Indonesia	<i>Nilaparvata lugens</i>	[36], this study
ARSEF 2231	<i>M. pinghaense</i>	<i>M. pinghaense</i>	<i>M. pinghaense</i>	<i>M. pinghaense</i>	KX342723	OR400502	India	<i>Zygogramma bicolorata</i>	[36], this study
ARSEF 3180	<i>M. pinghaense</i>	<i>M. pinghaense</i>	<i>M. pinghaense</i>	<i>M. pinghaense</i>	KX342704	OR400503	Philippines	Soil	[36], this study
ARSEF 3604	<i>M. pinghaense</i>	<i>M. pinghaense</i>	<i>M. pinghaense</i>	<i>M. pinghaense</i>	KX342708	OR400504	Papua New Guinea	<i>Scapanes australis</i>	[36], this study
ARSEF 4290	<i>M. pinghaense</i>	<i>M. pinghaense</i>	<i>M. pinghaense</i>	<i>M. pinghaense</i>	KX342705	OR400505	Solomon Islands	Coleoptera	[36], this study
ARSEF 5625	<i>M. brunneum</i>	<i>M. brunneum</i>	<i>M. brunneum</i>	<i>M. brunneum</i>	KX342765	OR400506	Finland	Soil	[36], this study
ARSEF 8680	<i>M. anisopliae sensu lato</i>	<i>M. brunneum</i>	<i>M. brunneum</i>	<i>M. brunneum</i>	FJ229493	OR400507	Canada	Soil	[24], this study
ARSEF 9975	<i>Metarhizium sp.</i>	<i>M. pinghaense</i>	<i>M. pinghaense</i>	<i>M. pinghaense</i>	MK156097	OR400508	U.S.A.	Soil	[50], this study
CEPAVE CEP 005	<i>M. anisopliae sensu lato</i>	<i>M. brunneum</i>	<i>M. brunneum</i>	<i>M. brunneum</i>	OR441043	OR441065	Argentina, Buenos Aires, Berisso	<i>Aedes crinifer</i> [Diptera: Culicidae]	this study
CEPAVE CEP 076	<i>M. anisopliae sensu lato</i>	<i>M. anisopliae</i>	<i>M. anisopliae</i>	<i>M. anisopliae</i>	OR441044	OR441066	Argentina, Buenos Aires, Los Hornos	<i>Kanaima fluvialis</i> [Hemiptera: Cercopidae]	this study
CEPAVE CEP 120	<i>M. anisopliae sensu lato</i>	<i>M. anisopliae</i>	<i>M. anisopliae</i>	<i>M. anisopliae</i>	OR441045	OR441067	Argentina, Buenos Aires, Abasto	<i>Kanaima fluvialis</i> [Hemiptera: Cercopidae]	this study
CEPAVE CEP 392	<i>M. anisopliae sensu lato</i>	<i>M. robertsii</i>	<i>M. robertsii</i>	<i>M. robertsii</i>	OR441046	OR441068	Argentina, San Juan, Est. Exp. P	Soil	this study
CEPAVE CEP 423	<i>M. anisopliae sensu lato</i>	<i>M. robertsii</i>	<i>M. robertsii</i>	<i>M. robertsii</i>	OR441047	OR441069	Argentina, La Plata	Soil	this study
CEPAVE CEP 587	<i>M. anisopliae sensu lato</i>	<i>M. robertsii</i>	<i>M. robertsii</i>	<i>M. robertsii</i>	OR441048	OR441070	Argentina, Buenos Aires, Parque Pereyra Iraola	Soil	this study
CEPAVE CEP 615	<i>M. anisopliae sensu lato</i>	<i>M. robertsii</i>	<i>M. robertsii</i>	<i>M. robertsii</i>	OR441049	OR441071	Argentina	Soil	this study

CEPAVE CEP 683	<i>M. anisopliae sensu lato</i>	<i>M. robertsii</i>	<i>M. robertsii</i>	<i>M. robertsii</i>	OR441050	OR441072	Argentina, La Plata, Est. Exp. J. Hirschhorn	Soil	this study
CEPAVE CEP 773	<i>M. anisopliae sensu lato</i>	<i>M. brunneum</i>	<i>M. brunneum</i>	<i>M. brunneum</i>	OR441051	OR441073	Argentina, Salta, Piedra del Molino	Soil	this study
INISAV LBM-5	<i>M. anisopliae</i>	<i>M. anisopliae</i>	<i>M. anisopliae</i>	<i>M. anisopliae</i>	MZ329397	OR441058	Cuba	undetermined Hemipteran insect	[6], this study
INISAV LBM-7	<i>M. anisopliae sensu lato</i>	<i>M. robertsii</i>	<i>M. robertsii</i>	<i>M. robertsii</i>	OR423400	OR441059	Cuba	undetermined Homopteran insect	this study
INISAV LBM-10	<i>M. anisopliae</i>	<i>M. anisopliae</i>	<i>M. anisopliae</i>	<i>M. anisopliae</i>	MZ329398	OR441060	Cuba	undetermined Hemipteran insect	[6], this study
INISAV LBM-11	<i>M. anisopliae</i>	<i>M. anisopliae</i>	<i>M. anisopliae</i>	<i>M. anisopliae</i>	MZ329399	OR441061	Cuba, Havana	<i>Mocis latipes</i> (Lepidoptera: Erebidiae)	[6], this study
INISAV LBM-12	<i>M. anisopliae</i>	<i>M. anisopliae</i>	<i>M. anisopliae</i>	<i>M. anisopliae</i>	MZ329400	OR441062	Cuba	<i>Corcyra cephalonica</i> (Lepidoptera: Pyralidae)	[6], this study
INISAV LBM-146	<i>M. robertsii</i>	<i>M. robertsii</i>	<i>M. robertsii</i>	<i>M. robertsii</i>	MZ329401	OR441063	Cuba	Leaf hopper (Hemiptera: Cicadellidae)	[6], this study
INISAV LBM-267	<i>M. anisopliae</i>	<i>M. anisopliae</i>	<i>M. anisopliae</i>	<i>M. anisopliae</i>	MZ329402	OR441064	Cuba	Leaf hopper (Hemiptera: Cicadellidae)	[6], this study
KTMU M-01	<i>M. anisopliae sensu lato</i>	<i>M. robertsii</i>	<i>M. robertsii</i>	<i>M. robertsii</i>	OR441052	OR441074	Kyrgyzstan, Chemche village	Soil	this study
KTMU M-04	<i>M. anisopliae sensu lato</i>	<i>M. robertsii</i>	<i>M. robertsii</i>	<i>M. robertsii</i>	OR441053	OR441053	Kyrgyzstan, Syrt village	Soil	this study
KTMU M-05	<i>M. anisopliae sensu lato</i>	<i>M. robertsii</i>	<i>M. robertsii</i>	<i>M. robertsii</i>	OR441054	OR441076	Kyrgyzstan, Molo village	Soil	this study
KTMU M-07	<i>M. anisopliae sensu lato</i>	<i>M. robertsii</i>	<i>M. robertsii</i>	<i>M. robertsii</i>	OR441055	OR441077	Kyrgyzstan, Zhetigen village	Soil	this study
KTMU M-13	<i>M. anisopliae sensu lato</i>	<i>M. robertsii</i>	<i>M. robertsii</i>	<i>M. robertsii</i>	OR441056	OR441078	Kyrgyzstan, Krugowoi	Soil	this study
KTMU M-15	<i>M. anisopliae sensu lato</i>	<i>M. robertsii</i>	<i>M. robertsii</i>	<i>M. robertsii</i>	OR441057	OR441079	Kyrgyzstan, Kolmo village	Soil	this study