Supplementary Material

Riveros et al., **Occurrence, prevalence and viral load of deformed wing virus variants in *Apis mellifera* colonies in Chile**

Table S1. Primers used for the detection of honey bee DWV-variants in real time PCR.

Primer	Name	Sequence (5′→3′)	Target sequence	Reference
DWV-A	DWVF1425	CGTCGGCCTATCAAAG	Leader protein gene	Locke et al., 2012
	DWVB1806	CTTTTCTAATTCAACTTCACC		
DWV-A	DWV-F2MOD[1]	TaTCTTCATTAAAGCCACCTGGAA	RNA-dependent RNA polymerase gene	McMahon et al., 2016
	DWV-R2a	TTTCCTCATTAACTGTGTCGTTGAT		
DWV-B	VDV1- F1409	GCCCTGTTCAAGAACATG	Leader protein gene	Locke et al., 2012
	DWVB1806	CTTTTCTAATTCAACTTCACC		
DWV-B	VDV-F2	TATCTTCATTAAAACCGCCAGGCT	RNA-dependent RNA polymerase gene	McMahon et al., 2016
	VDV-R2a	CTTCCTCATTAACTGAGTTGTTGTC		
DWV-C	DWVnew-F1	TACTAGTGCTGGTTTTCCTTT	RNA-dependent RNA polymerase gene	Kevill et al., 2017
	DWVC-R1	ATAAGTTGCGTGGTTGAC		
β-actin	β-actin F	ATGCCAACACTGTCCTTTCTGG	β-actin gene	Yang and Cox-Foster, 2005
	β-actin R	GACCCACCAATCCATACGGA		

[1]The lowercase letter in the primer sequences indicates nucleotide modification according to the Chilean DWV sequence (JQ413340).

Table S2. Sampling period and *Varroa destructor* control data in honey bee colonies distributed throughout Chile.

		Samples collecting data			Positives samples				Varroa control		
Location	**Region**	**Colonies**	**Season**	**Year**	**DWV-A**	**%**	**DWV-B**	**%**	**Yes**	**No**	**Ni**
North	Coquimbo	37	Spring	2017	37	100	1	3	30	7	0
Central	Valparaíso	63	Spring	2017	44	70	6	10	33	10	20
Central	Metropolitana	88	Summer	2015-2016	61	69	0	0	16	4	68
Central	O´Higgins	78	Summer	2015-2016	53	68	5	6	19	4	55
Central	Maule	78	Autumn	2016	57	73	0	0	23	2	53
Central	Biobío/Ñuble	133	Spring-Summer	2016-2017	84	63	4	3	52	24	57
South	Araucanía	90	Summer-Autumn	2015-2016	56	62	0	0	46	0	44
South	Los Ríos	24	Summer-Autumn	2017	24	100	0	0	18	6	0
South	Los Lagos	21	Summer-Autumn	2017	21	100	1	5	18	0	3

Ni: No information

Fig. S1. Sequence alignments of DWV master variants from Chile and compared with reference genomes (§).

References

Kevill, J.L., Highfield, A., Mordecai, G.J., Martin, S.J. & Schroeder, D.C., (2017) ABC assay: method development and application to quantify the role of three DWV master variants in overwinter colony losses of European honey bees. *Viruses*, 9: 314. doi:10.3390/v9110314.

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