

S1 Table. *Phlebotomus perniciosus* L1 infected with larval food (2 doses at D0 and D2)

Developmental stage	Sampling day	Nb positive / tested / %
Pre exposure	D0	0/20
larvae	D2	0/20
larvae	D5 / D3	6/18/33.3%
larvae	D12 / D9	0/20
larvae	D19 / D16	0/20
pupae	D26 / D23	1/20/5%
emerged adults	D33 / D30	0/17/0
emerged adults	D35 / D32	1/29/3.4%
emerged adults	D37 / D34	0/86/0%
emerged adults	D38 / D35	0/234
emerged adults	D40 / D37	0/143
emerged adults	D42 / D39	0/126
emerged adults	D45 / D42	0/102
emerged adults	D47 / D44	0/22
emerged adults	D49 / D46	0/19
emerged adults	D52 / D49	0/11
emerged adults	D54 / D51	0/2
emerged adults	D56 / D53	0/5

S2 Table. *Phlebotomus perniciosus* L4 infected with larval food (one dose at D0)

Developmental stage	Sampling day	Nb positive / tested / %
larvae	D0	0/20
larvae	D2	0/10
pupae	D5	4/10/40%
emerged adults	D12	0/2
emerged adults	D14	2/11/18.2%
emerged adults	D16	1/20/5%
emerged adults	D19	0/37
emerged adults	D21	0/5
emerged adults	D23	0/3
emerged adults	D26	0/1

S3 Table. *P. perniciosus* females infected by bloodmeal (one dose at D0)

Developmental stage	Sampling day	Nb tested
adult females pre-exposure to infected blood		0/20
adult females non defecated	D0	9/10/90%
adult females defecated	D5	2/10/20%
adult females defecated	D7	2/10/20%
adult females defecated	D9	1/7/14.3%

S4 Table. Susceptibility of females of *P. perniciosus*, *P. orientalis*, *P. papatasi*, *P. sergenti*, *P. argentipes*, *S. schwetzi* and *L. longipalpis* to MASV. neg = negative

		D2	D4	D7	D9	D11	D14	D16	D18	D21
<i>P. perniciosus</i>	infected/total	0/20	15/22	19/21	16/20	19/20	18/20	18/20	18/22	
	% infected	0	68.2	90.5	80	95	90	90	82	
	mean number of RNA copies	neg	149	600	89	105	27	8	5	
<i>P. orientalis</i>	infected/total	9/20	13/20	18/20	12/20	11/19	10/20	9/28	2/6	
	% infected	45	65	90	60	57.9	50	32.1	33.3	
	mean number of RNA copies	555	600	283	125	51	87	42	13	
<i>P. papatasi</i>	infected/total	3/20	16/20	14/20	12/20	12/20	10/20	12/20	9/20	3/10
	% infected	15	80	70	60	60	50	60	45	30
	mean number of RNA copies	1385	139	134	49	366	75	53	443	57
<i>P. sergenti</i>	infected/total	7/20	9/20	14/20	11/20	11/20	10/20	8/13	8/17	
	% infected	35	45	70	55	55	50	61.5	47.1	
	mean number of RNA copies	5714	769	786	874	324	130	38	64	
<i>P. argentipes</i>	infected/total	10/20	19/20	19/20	17/19	9/19	0/8	1/8		
	% infected	50	95	95	89.5	47.4	0	13		
	mean number of RNA copies	1051	277	136	56	16	neg	5		
<i>S. schwetzi</i>	infected/total	9/20	14/20	18/20	15/20	17/20	11/20	6/13	6/10	
	% infected	45	70	90	75	85	55	46.2	60	
	mean number of RNA copies	230	95	95	84	35	16	5	15	
<i>L. longipalpis</i>	infected/total	9/20	16/10	18/20	14/20	9/20	4/20	1/13	1/7	
	% infected	45	80	90	70	45	20	7.7	14.3	
	mean number of RNA copies	622	129	179	34	12	24	5	3	

S5 Table. Susceptibility of males of *P. perniciosus*, *P. orientalis*, *P. papatasi*, *P. sergenti*, *P. argentipes*, *S. schwetzi* and *L. longipalpis* to MASV. neg = negative

		D2	D4	D7	D9	D11	D14	D16	D18	D21
<i>P. perniciosus</i>	infected/total	0/10	14/24	21/21	20/20	20/21	17/20	10/20	8/20	
	% infected	0	60	100	100	95	85	50	40	
	mean number of RNA copies	neg	94	418	153	82	29	2	5	
<i>P. orientalis</i>	infected/total	8/20	12/20	14/20	5/20	2/20	0/10			
	% infected	40	60	70	25	10	0			
	mean number of RNA copies	103	106	112	13	20	neg			
<i>P. papatasi</i>	infected/total	4/20	17/20	13/20	13/20	10/20	7/20	9/20	5/18	5/10
	% infected	20	85	65	60	50	35	45	27.8	50
	mean number of RNA copies	162	525	271	81	36	37	78	273	430
<i>P. sergenti</i>	infected/total	5/20	10/20	10/20	14/20	10/20	13/20	7/17	0/1	
	% infected	25	50	50	70	50	65	41.2	0	
	mean number of RNA copies	302	271	433	160	116	66	86	neg	
<i>P. argentipes</i>	infected/total	10/20	17/20	20/20	9/15	3/5				
	% infected	50	85	100	60	60				
	mean number of RNA copies	258	110	110	43	26				
<i>S. schwetzi</i>	infected/total	8/20	20/20	16/20	10/19	13/20	13/20	7/20		
	% infected	40	100	80	52.6	65	65	35		
	mean number of RNA copies	134	56	28	12	36	14	11		
<i>L. longipalpis</i>	infected/total	7/20	15/20	13/20	10/20	9/20	3/20	1/11	0/10	
	% infected	35	75	65	50	45	15	9.1	0	
	mean number of RNA copies	320	135	38	12	114	46	4	neg	

S6 Table. Tissue specificity of MASV in three selected species. Intensity of infection in gut, salivary glands and rest of body in females *P. perniciosus*, *S. schwetzi* and *L. longipalpis*.

	Viral load	D4	D7	D10
<i>P. perniciosus</i>	salivary glands	12	12	neg
	midgut	1007	48	17
	rest of body	6354	496	227
<i>S. schwetzi</i>	salivary glands	11	7	neg
	midgut	262	30	32
	rest of body	1081	345	412
<i>L. longipalpis</i>	salivary glands	neg	neg	neg
	midgut	176	51	11
	rest of body	1202	506	71