Selection on age of female reproduction in the marula fruit fly, *Ceratitis cosyra*, decreases total antioxidant capacity and lipid peroxidation

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Table S1. ***Post hoc*** **multiple comparisons between control (CT) and upward selected (US) flies using estimated marginal means for total antioxidant capacity.** The table reads from the top rows to the left columns. The direction of the difference is indicated by +/- and the significance by a p value in bold.

			CT						**US**					
			Female			Male			Female			Male		
			0	25	50	0	25	50	0	25	50	0	25	50
CT	Female	0												
		25	+ / < **0.001**						- / 1					
		50	+ / < **0.001**	+ / < **0.001**					+ / < **0.001**	+ / **0.003**				
	Male	0	+ / 1	- / < **0.001**	- / < **0.001**				- / < **0.001**	- / < **0.001**	- / < **0.001**			
		25	+ / < **0.001**	+ / 0.077	+ / 0.968	+ / < **0.001**			+ / 0.060	+ / 0.592	+ / < **0.001**	+ / < **0.01**		
		50	+ / < **0.001**	+ / < **0.001**	+ / < **0.001**	+ / < **0.001**	+ / < **0.001**		+ / < **0.001**	+ / < **0.001**	+ / < **0.001**	+ / < **0.001**	+ / < **0.001**	
US	Female	0	+ / < **0.001**											
		25	+ / < **0.001**	+ / 0.991					+ / 0.998					
		50	+ / < **0.001**	- / 0.999	- / < **0.001**				- / 0.994	- / 0.798				
	Male	0	+ / < **0.001**	- / 1	- / < **0.001**	+ / < **0.001**			- / 1	- / 0.992	+ / 0.999			
		25	+ / < **0.001**	+ / < **0.001**	+ / 0.999	+ / < **0.001**	+ / 0.424		+ / < **0.001**	+ / < **0.01**	+ / < **0.001**	+ / < **0.001**		
		50	+ / < **0.001**	- / 0.999	- / < **0.001**	+ / < **0.001**	- / < **0.001**	- / < **0.001**		- / 0.751	- / 1	- / 0.995	- / < **0.001**	

Table S2. *Post hoc* multiple comparisons between control (CT) and upward selected (US) flies using estimated marginal means for lipid peroxidation.

The table reads from the top rows to the left columns. The direction of the difference is indicated by +/- and the significance by a p value in bold.

			CT						**US**					
			Female			Male			Female			Male		
			0	25	50	0	25	50	0	25	50	0	25	50
CT	Female	0												
		25	+ / 0.997						**- / < 0.001**					
		50	**+ / < 0.001**	**+ / < 0.001**					+ / 1	- / 0.956				
	Male	0	- / 1	- / 0.989	**- / < 0.001**				**- / < 0.001**	**- / < 0.001**	**- / < 0.001**			
		25	+ / 0.068	+ / 0.825	- / 0.129	**+ / 0.014**			- / 0.122	**- / < 0.01**	**- / < 0.01**	**- / 0.487**		
		50	**+ / < 0.01**	+ / 0.457	- / 0.529	**+ / < 0.001**	+ / 0.999		- / 0.523	**- / 0.035**	**- / 0.048**	- / 0.925	- / 0.999	
US	Female	0	**+ / < 0.001**											
		25	**+ / < 0.001**	**+ / < 0.001**					+ / 0.910					
		50	**+ / < 0.001**	**+ / < 0.001**	+ / 1				+ / 0.999	- / 0.999				
	Male	0		**+ / <0.01**	- / 0.999	**+ / < 0.001**			- / 0.999	- / 0.513	- / 0.831			
		25	**+ / < 0.001**	+ / 0.077	- / 0.929	**+ / < 0.001**	+ / 0.914		- / 0.934	- / 0.175	- / 0.347	- / 0.999		
		50	**+ / 0.011**	+ / 0.540	- / 0.696	**+ / < 0.001**	+ / 0.999	+ / 0.999	- / 0.651	- / 0.075	- / 0.075	- / 0.953	- / 0.999	

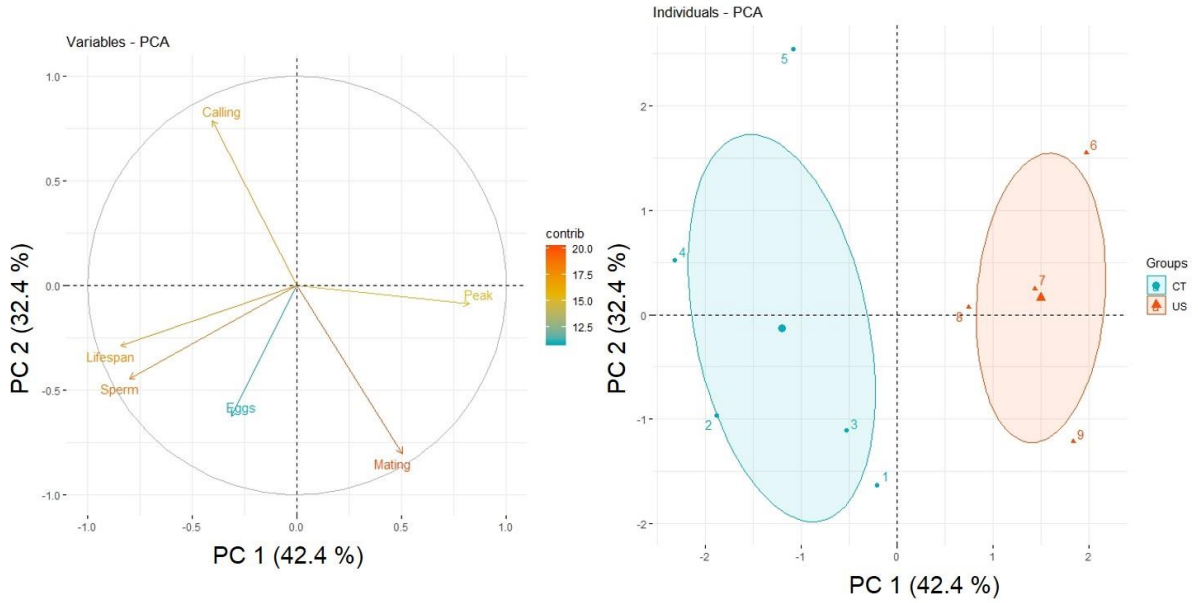

Figure S1. Principal components analysis using the means for lifespan, total sperm transfer, total number of eggs laid, peak of egg production, and propensity for male calling and mating in control (CT) and upward-selected (US) lines. Upward-selection was performed by allowing females to oviposit only at 25 days after adult emergence, whereas eggs were collected from controls at 15 days. For lifespan, females and males were pooled. For male reproductive traits, the three age categories (5, 15 and 25 days) were combined. The colours in the left panel indicate how much a given trait contributes to the variance (blue low contribution, red high contribution). The numbers in the right panel represent each replicate for the CT (1, 2, 3, 4, 5) and US (6, 7, 8, 9) lines.

Principal components 1 and 2 explained 74.8 % of the variance. The left panel shows which traits are positively or negatively correlated with the principal components and each other. Long lives were associated with high numbers of sperm stored in the spermathecae of females and an earlier age of peak egg production. In addition, male calling was associated with poor mating. The panel to the right in figure S1 shows where replicates of the two lines are located along the two principal components. The US and CT lines are well clustered on each side of the first principal component. In comparison with CT lines (blue ellipse), the US lines (orange ellipse) are characterised by shorter lives, a later age of peak egg production and fewer sperm transferred by males to the spermathecae of females.

The principal components analysis was performed in R (v 3.5.3, The R Foundation for Statistical Computing) using the built-in function “prcomp”. Graphical representations were produced using the function “fviz_pca” from the package “factoextra”.