Table S1. Description of the statistical models used in analysis. Sampling size gives the number of mosquitoes included in each analysis. "Maximal model" gives the complete set of explanatory variables (and their interactions) included in the model. "Minimal model" gives the model containing only the significant variables and their interactions. Round brackets indicate that the variable was fitted as a random factor. Square brackets indicate the error structure used (n: normal, b: binomial, nb: negative binomial with variance = $\phi\mu$, bb: beta-binomial, zinb: zero-inflated negative binomial with variance = $\mu[1 + \mu/k]$). size: mosquito wing size, hm: haematin excreted (blood meal size), infection: binomial response variable of infection in which at least one oocyst was counted in the female midgut (1) or none (0), eggs: number of eggs laid by the female, raft: binomial response variable of rafts in which at least one of the eggs hatched (1) or none of them (0), (un)hatch: proportion of eggs (un)hatched in a raft, W: mosquito lines (w^{SL} or $w^{(-)}$), P: *Plasmodium* infection status (exposed to a *Plasmodium*-infected bird vs. an uninfected bird).

	Variable of interest		Response variable	Model Nb.	Sampling size	Maximal model	Minimal model	R subroutine [err struct.]
Experiment 1	Infection success	adult size	size ^ 3.5	1	1088[1]	W	1	lm [n]
		excreted haematin	√(hm)	2	1088[1]	P * W * size * birds hematocrit	P * birds hematocrit + W + size	lm [n]
		infection rate	infection	3	105[2]	W * hm * size + (cage)	1 + (cage)	glmer [b]
		number of oocysts	oocysts	4	84[3]	W * hm * size + (cage)	1 + (cage)	glmmADMB [nb]
	Fecundity	number of eggs	eggs	5	982[4]	P * W + (cage)	P + W + (cage)	glmmADMB [nb]
		number of eggs	eggs	6	982[4]	P * W * hm * hm ² * size + (cage)	P + W + hm + hm² + size + (cage)	glmmADMB [nb]
		productive raft	raft	7	982[4]	P * W + eggs + hm + (cage)	eggs + (cage)	glmer [b]
		eggs hatching rate	cbind(hatch,unhatch)	8	953[5]	P * W + eggs + hm + (cage)	eggs + hm + (cage)	glmmADMB [bb]
Experiment 2	Infection success	adult size	size	9	307[6]	W	W	lm [n]
		excreted haematin	√(hm)	10	333[4]	W * size * birds hematocrit	birds hematocrit	lme [n]
		infection rate	infection	11	333[4]	W * hm * size + (cage)	1 + (cage)	glmer [b]
		number of oocysts	oocysts	12	305[3]	W * hm * size + (cage)	1 + (cage)	glmmADMB [zinb]
	Fecundity	number of eggs	eggs	13	333[4]	W + (cage)	W + (cage)	glmmADMB [nb]
		number of eggs	eggs	14	307[6]	W * hm * hm ² * size + (cage)	W + hm + hm² + size + (cage)	glmmADMB [nb]
		number of eggs	eggs/hematin	15	333[4]	W * log(oocysts) + (cage)	W + (cage)	lmer [n]

[1] Includes all emerged females haphazardly selected for the experiment.
[2] A hundred and five mosquitoes were dissected for measuring oocysts number.
[3] Includes only those females that contained oocysts.
[4] Includes only those females that did lay eggs.
[5] Includes only those females whose egg rafts hatched (some females laid egg rafts that did not yield a single larva).
[6] Includes only those females whose wings could be measured

Table S2. Life history trait measurements and *Plasmodium* infection success in *Wolbachia*-infected (w^{SL}) and uninfected ($w^{(-)}$) mosquitoes. Values represent means ± standard errors in both experiments.

		$w^{(-)}$		w^{SL}	
		control	***Plasmodium* infected**	**control**	***Plasmodium* infected**
Experiment 1	**Size**				
	Adult wing size (mm)	3.273 ± 0.006		3.290 ± 0.005	
	Blood feeding				
	mean excreted haematin (µg)	19.71 ± 0.31	11.38 ± 0.20	21.33± 0.30	12.62 ± 0.21
	Infection success				
	per cent females infected	-	76.79 ± 0.75	-	83.67 ± 0.75
	oocysts load	-	11.98 ± 1.55	-	12.07 ± 1.71
	Fecundity				
	mean number of eggs laid	153 ± 3	127 ± 3	175 ± 3	137 ± 3
	Fertility				
	% productive rafts	96.7 ± 1.1	95.2 ± 1.4	98.5 ± 0.8	97.7 ± 1.0
	mean hatching rate	78.6 ± 2.5	78.5 ± 2.8	77.7 ± 2.6	80.8 ± 2.7
Experiment 2	**Size**				
	Adult wing size (mm)	3.659 ± 0.014		3.621 ± 0.010	
	Blood feeding				
	mean excreted haematin (µg)	-	22.01 ± 0.57	-	21.06 ± 0.52
	Infection success				
	per cent females infected	-	92.02 ± 2.13	-	91.18 ± 2.18
	oocysts load	-	27.08 ± 2.54	-	23.44 ± 2.63
	Fecundity				
	mean number of eggs laid	-	188 ± 4	-	166 ± 3

Figure S1. Mosquito size and blood meal intake. A: Mean wing size for *Wolbachia*-infected (W^{SL}) and uninfected (W^{-}) females in each of the experiments (*Plasmodium*-infected and uninfected females have been pooled). B and C: Mean blood meal size quantified as the amount of haematin excreted by *Wolbachia*-infected (grey circles) and uninfected (black circles) mosquitoes exposed (full circles) or not (empty circles) to *Plasmodium* in Experiment 1 (B) and 2 (C).

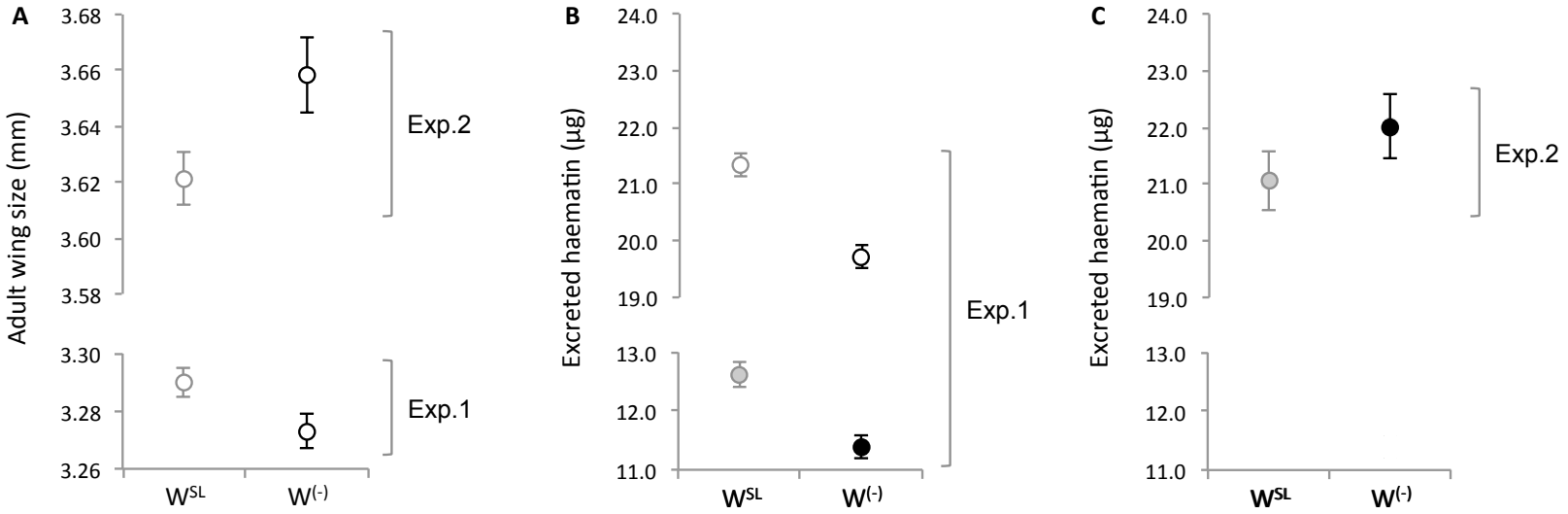

Figure S2. Relationship between bird hematocrit (quantified as Packed Cell Volume) and the amount of haematin excreted by *Cx. pipiens* females in Experiment 1 (A) and 2 (B). The fitted lines correspond to the linear trend of the data plots. Empty dots and dashed lines: *Plasmodium*-uninfected birds, Filled dots and solid lines: *Plasmodium*-infected birds. Grey dots and lines: w^{SL} females, black dots and lines: $w^{(-)}$ females. Experiment 2 only includes *Plasmodium*-infected females.

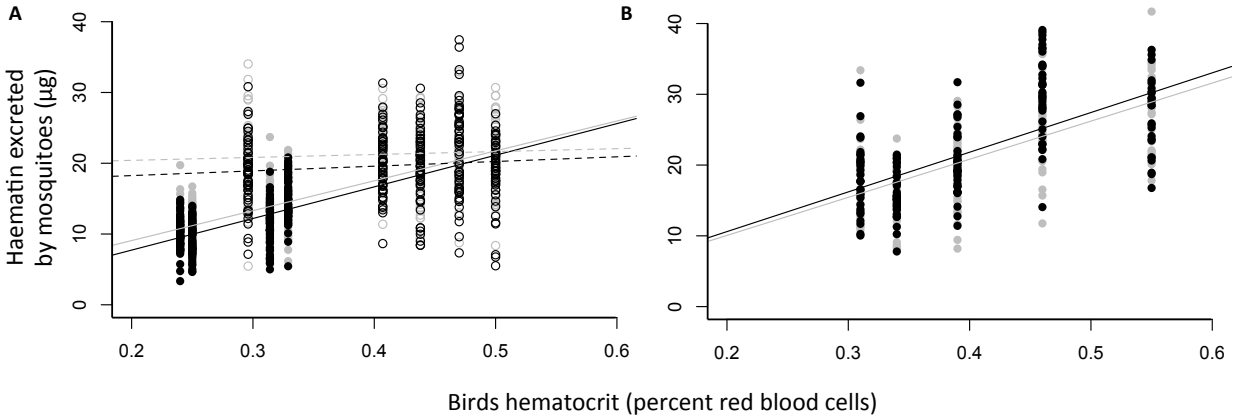

Figure S3. Distribution of the number of oocysts in the midgut of *Plasmodium*-infected females in Experiment 2. *Wolbachia*-carrying females (grey circles) and *Wolbachia*-free ones (black circles). Horizontal lines represent means (dotted line) and medians (solid lines).