

Verschut, T. A., Hambäck, P. A. and Anderson, P. 2017. Mating affects resource selection and modulates associational effects between neighbouring resources. – Oikos doi: 10.1111/oik.04315.

Appendix 1

Table A1. Summary of the analysis of the absolute patch attraction rates.

Table A2. Predicted values for the relationship between resource frequency and the patch attraction rates.

Table A3. Summary of the analysis of the absolute selection rates in the one- and two-odour point source experiments

Table A4. Summary of the analysis of absolute selection rates in the four-odour point sources experiments separated on mating states.

Table A5. Summary of the analysis of the relative selection rates in the four-odour point sources experiments.

Table A6. Summary of the analysis of the flight duration.

Figure A1. Overview of the absolute selection rates in the four-odour point source patches.

Figure A2. Overview of the flight duration.

Table A1. Summary of likelihood ratio tests (χ^2) of the absolute attraction rates of *Drosophila melanogaster* females in the four-odour point source experiments. State represents whether the females were mated or unmated, and odour accounts for apple and banana. Only those interactions left after backwards selection are provided in the table.

Selection steps	Factors	χ^2	df	p
Attraction rate	Frequency	0.213	1	0.994
	State	0.001	1	0.991
	Odour	1.611	1	0.204
	State \times Odour	3.874	1	0.048

Table A2. Predicted values of the relationship between resource frequency and the overall patch attraction rate. Resource frequency represents the number of odour point sources emitting releasing banana in the patch.

State	Factors	Estimate	Standard error	χ^2	p
Unmated	Intercept	0.004	0.244	0.015	0.988
	Frequency	2.278	1.198	2.325	0.020
	Squared Frequency	-2.199	1.156	-1.901	0.057
Mated	Intercept	-0.205	0.245	-0.838	0.402
	Frequency	3.736	1.185	3.154	0.001
	Squared Frequency	-3.546	1.136	-3.122	0.002

Table A3. Summary of likelihood ratio tests (χ^2) of the absolute landing rates of *Drosophila melanogaster* females in the one- and two-odour point source experiments. The selection step accounts for the attraction rate and the landing rate in the in two-odour point sources experiment, and state represents whether the females were unmated or mated. Only those interactions relevant for explaining the behavioural patterns, or left after backwards selection, are provided in the table.

Odour point sources	Selection steps	Factors	χ^2	df	p
One-odour point source	Landing rate	State	0.57	1	0.45
		Odour	11.46	1	<0.001
		State \times Odour	0.44	1	0.51
Two-odour point sources	Attraction and landing rate	State	0.69	1	0.41
		Odour	2.51	1	0.11
		Selection step	0.75	1	0.39
		State \times Odour	5.61	1	0.02

Table A4. Summary of likelihood ratio tests (χ^2) of the absolute selection rates in the four-odour point sources experiments divided into the two mating states. Only those interactions relevant for explaining the behavioural patterns, or left after backwards selection, are provided in the table.

Mating state	Factors	χ^2	df	p
Unmated	Frequency	11.235	1	<0.001
	Odour	23.891	1	<0.001
	Selection step	0.001	1	0.999
Mated	Frequency	0.565	1	0.452
	Odour	1.423	1	0.233
	Selection step	46.942	1	<0.001

Table A5. Summary of likelihood ratio tests (χ^2) of the relative attraction and landing rates in the four-odour point sources experiments. Only those interactions left after backwards selections are provided in the table. Additional results on behavioural differences between the two selection steps can be found in Table A1 and Table A2 in the electronic supplementary material.

Selection steps	Factors	χ^2	df	p
Attraction rate	Frequency	1.32	1	0.25
	State	0.01	1	0.99
	Odour	2.62	1	0.11
	State \times Odour	3.91	1	0.04
Landing rate	Frequency	3.57	1	0.06
	State	44.89	1	<0.001
	Odour	6.81	1	0.01
	State \times Odour	3.98	1	0.05
	State \times Frequency	9.39	1	0.02

Table A6. Summary of likelihood ratio tests (χ^2) of the flight duration of mated and unmated (i.e. state) *Drosophila melanogaster* females in the two- and four-odour point source experiments. Only those interactions relevant for the result of the test are provided in the table.

Odour point sources	Factors	χ^2	df	p
Two-odour point sources	Odour	1.249	1	0.264
	State	12.041	1	<0.001
	Odour \times state	0.165	1	0.684
Four-odour point sources	Odour	0.094	1	0.759
	State	16.914	1	<0.001
	Odour \times state	1.307	1	0.253

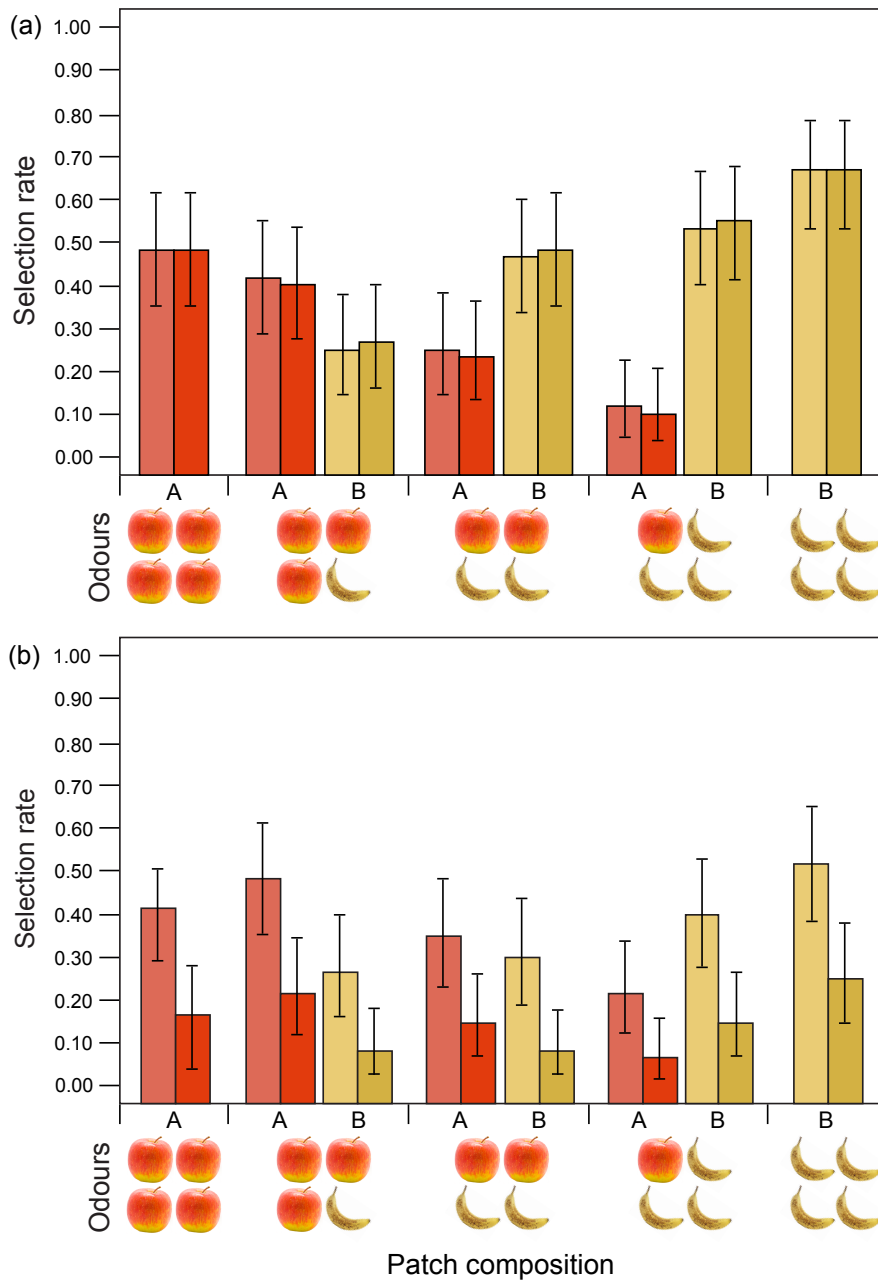


Figure A1. Absolute attraction rate of apple (light red bars) and banana (light yellow bars) and the absolute landing rate on apple (dark red bars) and banana (dark yellow bars) \pm 95% confidence intervals in the four-odour point source experiments ($n = 60$ per treatment) for (a) the unmated *Drosophila melanogaster* females and (b) the mated *D. melanogaster* females.

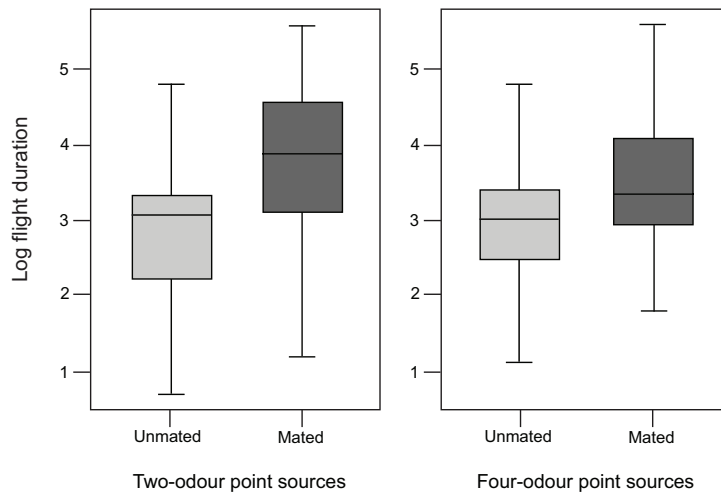


Figure A2. Log-transformed flight duration in (a) the two-odour point source experiments ($n = 60$ per treatment) and (b) the four-odour point source experiments ($n = 50$ per treatment) for unmated *Drosophila melanogaster* females (light grey bars) and mated *D. melanogaster* females (dark grey bars).