



Supplementary material

Table S1. Microhabitat and arboreal species present in the coffee plantations under study.

The tree cover was recorded at each point of substrate placement. Depth of leaf litter, coffee density and arboreal species are included (Meneses & Armbrrecht, 2018). Average values \pm SD are also presented. *One or two trees per plantations and usually planted at the borders.

Coffee plot	Tree cover (%)	Temperature (°C)	Relative humidity (%)	Leaf litter depth (cm)	Density (coffee shrubs number/5m ²)	Tree species
Sun-grown coffee 1	1.5 (\pm 6.2)	32.3 (\pm 3.5)	40.8 (\pm 10.6)	3.94	52	<i>Persea americana</i> , <i>Erythrina edulis</i> *
Sun-grown coffee 2	17.2 (\pm 26.8)	24.8 (\pm 2.0)	63.8 (\pm 9.9)	1	43	<i>Persea americana</i> *
Sun-grown coffee 3	0	31.0 (\pm 3.0)	46 (\pm 11.8)	3.29	43	<i>Psidium guajava</i> *
Shade-grown coffee 1	40.7 (\pm 34.1)	30.5 (\pm 0.9)	29.6 (\pm 5.4)	4.18	35	<i>Quercus humboldtii</i> , <i>Pinus patula</i> , <i>Cecropia telealba</i> , <i>Inga edulis</i>
Shade-grown coffee 2	36.7 (\pm 35.5)	25.6 (\pm 0.8)	39.2 (\pm 4.6)	6.15	45	<i>Pinus patula</i> , <i>Cecropia telealba</i> , <i>Nectandra latifolia</i> , <i>Quercus humboldtii</i>
Shade-grown coffee 3	49.2 (\pm 39.0)	26.6 (\pm 0.4)	40.2 (\pm 2.2)	5.1	42	<i>Pinus patula</i> , <i>Cecropia telealba</i> , <i>Nectandra latifolia</i>

Table S2. Inner temperatures inside the artificial substrates taken in five pairs of substrates at each of the coffee plantations. $N = 15$. Fourth column denotes the t test from samples within each coffee management type (sun-grown coffee plantations or shade-grown coffee plantations).

Coffee plantation	CC (°C)	PVC (°C)	T test between same type of management
Sun-grown coffee 1	26,18 (\pm 0,54)	26,68 (\pm 0,55)	$t_{(14)} = -2,28$; $p = 0,0298$
Sun-grown coffee 2	27,04 (\pm 0,28)	27,42 (\pm 0,35)	
Sun-grown coffee 3	26,68 (\pm 0,24)	27,04 (\pm 0,21)	
Shade-grown coffee 1	23,52 (\pm 0,55)	23,56 (\pm 0,54)	$t_{(14)} = 0,183$; $p = 0,855$
Shade-grown coffee 2	23,12 (\pm 0,22)	23,2 (\pm 0,23)	
Shade-grown coffee 3	26,26 (\pm 0,23)	26,38 (\pm 0,51)	



Table S3. Number of artificial substrates colonized by other arthropods than ants in test 2. The bees of the family Crabronidae were found to have the highest colonization events in the Corrugated Cover (CC) and PVC Cover (PVC) substrates.

Tree cover	Other arthropods colonizing substrates	PVC	CC
Sun-grown coffee	Arachnida: Araneae	1	0
	Blattodea: Blattoidea (Eggs)	1	2
	<i>Trypoxylon</i> sp. (Hymenoptera: Crabronidae)	1	1
Shade-grown coffee	Arachnida: Araneae	2	0
	<i>Trypoxylon</i> sp. (Hymenoptera: Crabronidae)	3	2
Total		8	5

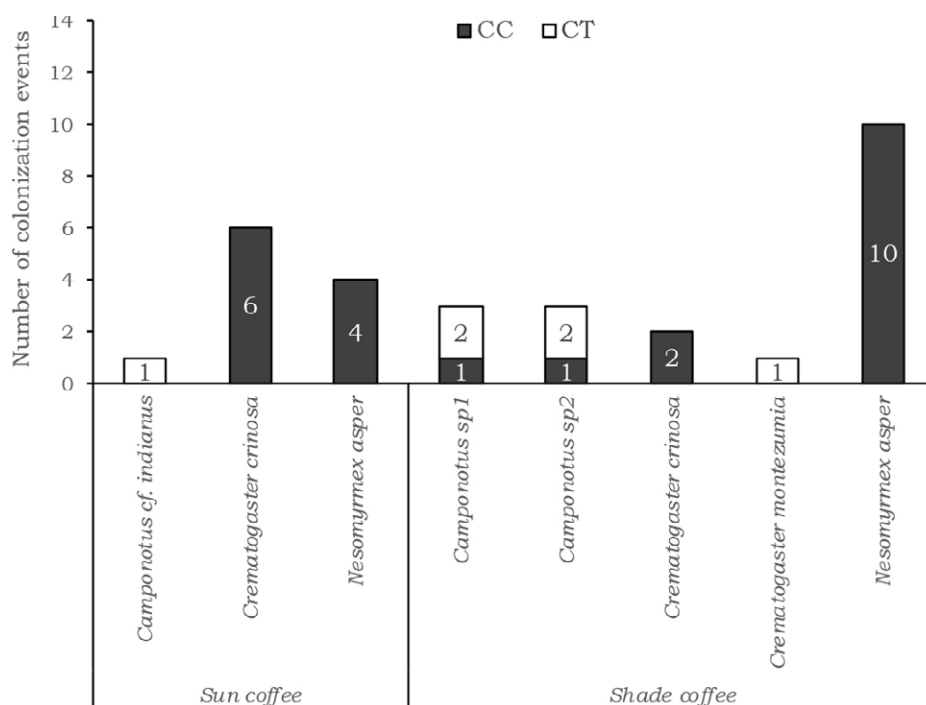


Figure S1. Colonization events by the different ant species established in substrates made by a polyvinyl chloride cover and filled with two different types of substrates: CC and CT, in sun-grown and shade-grown coffee plots, for test 1.

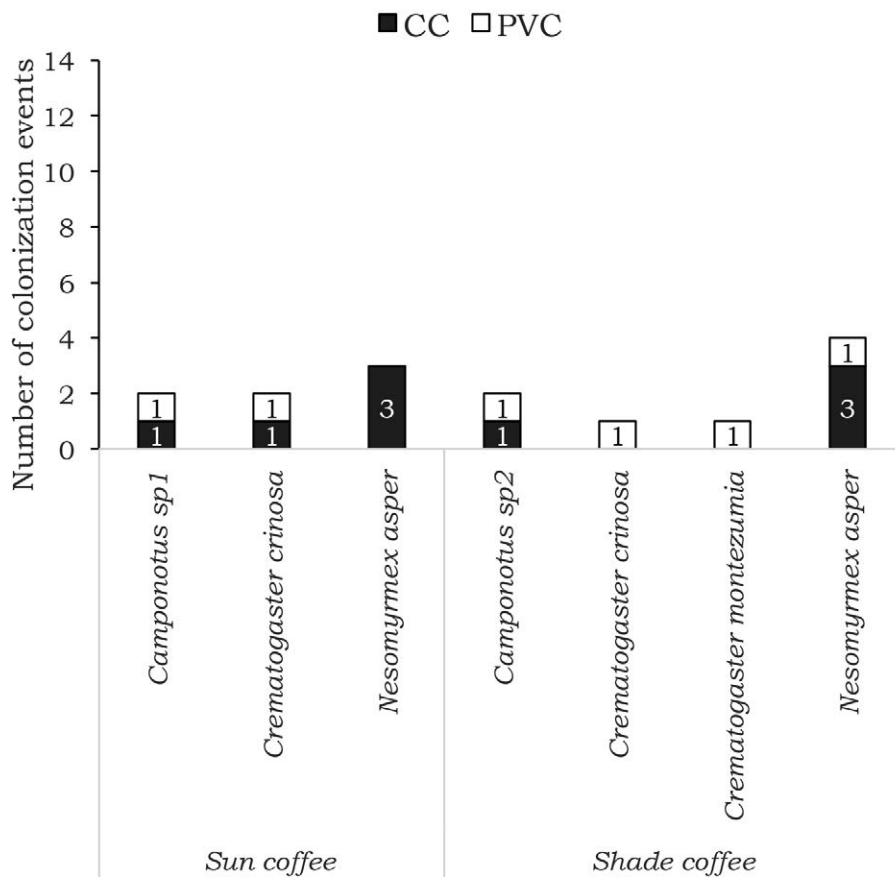


Figure S2. Colonization events by different ant species established in CC cover (CC-black) and polyvinylchloride cover (PVC-white) substrates, for test 2. A greater colonization of *Nesomyrmex asper* was observed in shade-grown plantations (CC) and of *N. asper* in sun-grown coffee (CC). *N. asper* colonized 37.5% of CC and of 12.5% in PVC. This was followed by *Camponotus sp. 2* (12.5% and 12.5% respectively). Both *C. crinosa* and *C. montezumia* showed a colonization of 12.5% in CC. In sun-grown coffee plantations *N. asper* occupied 60% (only CC), followed by *C. crinosa* (20% in both CC and PVC).

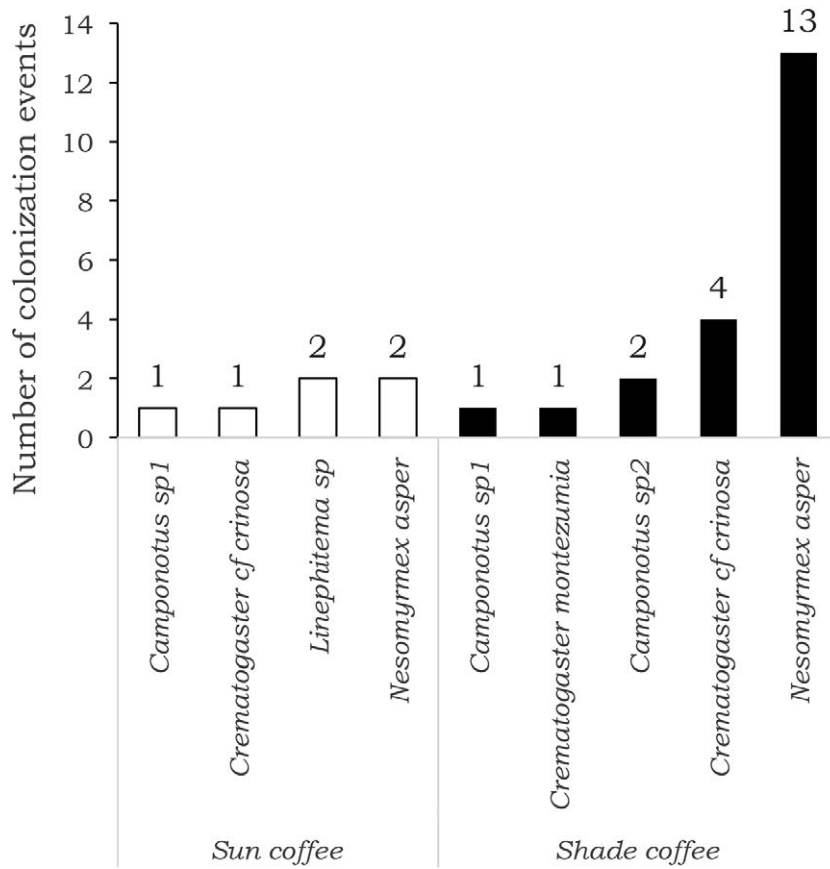


Figure S3. Ant species colonizing artificial substrates made of CC in shade-grown and sun-grown coffee plantations, during the monitoring of colonization in the test 3. *Nesomyrmex asper* is the species showing the greatest colonization, with an average of 15 colonization events during the 3 months of monitoring.