FIELD EVALUATION OF SIX MOSQUITO TRAPS

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AIM: Evaluation of the attractiveness (number of species, specimens abundance) and quality of the sample obtained by different mosquito traps.

TRAPS (figure 1):

- modified CDC trap CO_2 baited (CAA model) [CO_2 CAA]
- 1 Gravid trap[a] [GT]
- CDC light trap [CDC]
- CDC light CO_2 baited [CDC CO_2]
- BG Sentinel with BG lure attractive and CO_2[b][BG CO_2]
- BG Sentinel with BG lure [BG]

[a] attractive solution was obtained by putting in a bucket 5 L of water, 100 cc of rabbit pellets, 1 g of dry yeast, for 5 days at room temperature .
[B] carbon dioxide was added by placing two drilled thermos inside the traps.

SITES: Two sites were monitored, one in a garden close to wetland ("Riserva naturale Parma Morta", Mezzani, Parma) (site code PR) and one in a large harbored area inside Vantiniano cemetery, just outside Brescia historic center (site code BS). Samplings were performed from June 5 to October 8, 2010. The traps worked overnight (from 5.00 PM until 10.00 AM of the next day) every other week and were rotated on six fixed stations in every site.

SAMPLE: Trapped mosquitoes were identified to the species level, the *Ochlerotatus* taxon was considered an *Aedes* sub-genus. The family was determined for other haemato-phagous diptera, other insects were identified at order level (table 1).

RESULTS: The number of sampled mosquitoes is reported in table 1. The BG CO_2 sampled more mosquitoes, but this result is probably due to the large presence of *Ae. vexans* at the PR site. The CO_2 CAA trap sampled the highest number of *Culex* mosquitoes (table 1, figure 2). The date of sampling influenced uniformly all the samples and the position of the trap showed no significant effect on sample size (data not shown).

FIGURE 1 - Traps utilized in the experiment (from left: BG sentinel, CO_2 CAA, CDC CO_2, Gravid trap)

FIGURE 2 - Mosquito species must sampled in the experiment

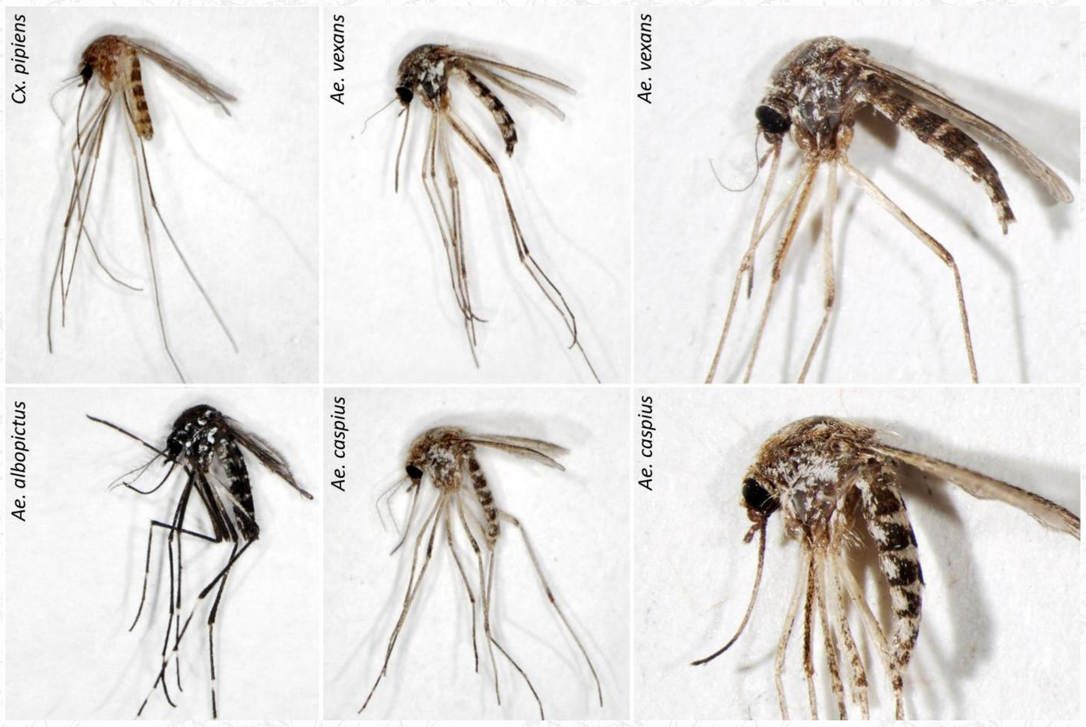

TABLE 1 - Number of specimens of mosquitoes and other arthropods sampled.

	BG		BG CO_2		CDC		CDC CO_2		CO_2 CAA		GT		Tot.		
Species	PR	BS	PR	BS	PR	BS	PR	BS	PR	BS	PR	BS	PR n° (%)	BS n° (%)	All n° (%)
Ae. albopictus	29	47	231	266			10	16	44	11	1	2	315 (3.7)	342 (29.1)	657 (6.8)
Ae. cantans								1						1 (<0.1)	1 (<0.1)
Ae. caspius			105	1			46	3	17	2			268 (3.1)	6 (0.5)	274 (2.8)
Ae. cinereus	1												1 (<0.1)		1 (<0.1)
Ae. detritus			6										6 (<0.1)		6 (<0.1)
Ae. geniculatus			19				2						21 (0.2)		21 (0.2)
Ae. vexans	47		2,677		76		1,698	2	555				4.953 (58.1)	2 (0.2)	4.955 (51.1)
Aedes spp.				4				1						5 (0.4)	5 (<0.1)
An. maculipennis s.l.	1		2	1	1		3				1		8 (<0.1)	1 (<0.1)	9 (<0.1)
An. plumbeus		1	2				1			1			3 (<0.1)	2 (0.2)	5 (<0.1)
Culiseta sp.							1						1 (<0.1)		1 (<0.1)
Cx. hortensis												10		10 (0.9)	10 (0.1)
Cx. modestus	1						6						7 (<0.1)		7 (<0.1)
Cx. pipiens	57	22	1,127	53	26	15	567	278	1,127	351	38	85	2.942 (34.5)	804 (68.5)	3.746 (38.6)
Culex spp.												1		1 (<0.1)	1 (<0.1)
Total of mosquitoes	136	70	4,169	325	103	15	2,334	301	1,743	365	40	98	8,525	1,174	9,699
Other hematophagous Dipera[c]		9	14	6	2	1	10	81	1	360			27	457	484
Diptera	145	190	117	131	612	146	716	123	111	210	126	819			
Lepidoptera	12	3	26		119	29	284	34	6		3	11			
Hymenoptera	9	22	4	9	1	2	8	1	2	17	1	5			
Coleoptera	1	2	8		24	1	30	1	3	1	6	28			
Neuroptera	4	0		122	2	4	7	4	1	4		0			
Other insects and aracnids	19	6	35	3	42	1	90	3	11	1	6	1			

[c] Culicoids, Sand flies, Blak flies

TABLE 2 - Evaluation of trap performances

	Mosquitoes		*Cx.pipiens*		*Ae. albopictus*		Mosquito species		Sample "cleaning"		No predators	
	PR	BS	PR	BS	PR	BS	PR	BS	PR	BS	PR	BS
BG	- -	- -	-	- -	++	+	+	-	++	-	- - -	+
BG CO_2	+++	++	+++	-	+++	+++	++	+	++	++	- - -	+
CDC	- -	- - -	-	- -	- -	- - -	- -	- -	- - -	- -	+	+++
CDC CO_2	++	++	++	++	+	- -	++	++	- - -	++	+	+++
CAA CO_2	++	+++	+++	+++	++	- -	+	+	+++	+	+++	++
GT	- - -	- -	-	+	+	- - -	- -	+	-	- -	-	++

CONCLUSIONS (table 2): 1) the traps baited with CO_2 obtained the largest samples; 2) the other attractants (light and BG lure) affect the number of sampled species; 3) CO_2 CAA and CDC CO_2 traps work well for the *Culex* genus, BG CO_2 trap catch more *Aedes* mosquitoes; 4) the insect predators (spider, ant) may enter the traps when they are positioned on the ground (BG, GT); 5) the light attract other insects (particularly moths) that make the sample more time consuming to analyze.