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MEDICAL AND VETERINARY  
(Hinkle & Mullen, cont'd)

~~TEKNAR and VECTOBAC did not differ appreciably when tested against larvae of the floodwater species, *A. canadensis*, *A. vexans* and *P. ferox*, collected from the field at temperatures of 8-15°C. In both cases mortality occurred between 10 and 20°C. *A. aegypti* and *C. pipiens* were more susceptible than any of the floodwater species at any given temperature. While all 3 products were effective at 10-30°C, no differences in larval mortality were apparent among the products. High mortalities in the checks below 10°C are attributed to the fact that field-collected *C. pipiens* and *A. aegypti* reared in the laboratory at 25°C did not tolerate lower water temperatures. Larvae of all 5 species actively fed at 15°C; at that temperature larval mortality was highest in *A. aegypti* followed by *C. pipiens*, *A. canadensis*, *P. ferox* and *A. vexans* in that order. These data suggest that B.t.i. is likely to be ineffective in controlling mosquitoes at low water temperatures as in the case of early spring populations of floodwater mosquitoes.~~

Water temp. (°C)	Mean percent mortality 24-h post treatment**																							
	<i>A. canadensis</i>				<i>A. vexans</i>				<i>P. ferox</i>				<i>C. pipiens</i>				<i>A. aegypti</i>							
	TEK(pt/a)		VEC(lb/a)		TEK(pt/a)		VEC(lb/a)		TEKpt/a		VEC(lb/a)		BAC(kg/ha)		TEK(pt/a)		VEC(lb/a)		BAC(kg/ha)		TEK(pt/a)		VEC(lb/a)	
0.5	1.0	0.5	1.0	0.5	1.0	0.5	1.0	0.5	1.0	0.5	1.0	0.125	0.25	0.5	1.0	0.5	1.0	0.125	0.25	0.5	1.0	0.5	1.0	
5....	0	0	0	0	0	0	0	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
7....	0	8	0	5	0	0	0	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10....	12	21	15	26	0	12	2	10	3	20	3	25	62	82	80	91	48	76	13	15	15	22	10	15
15....	22	48	13	30	2	17	2	18	12	30	8	46	86	97	85	92	54	83	100	100	100	100	100	100
20....	*	*	*	*	27	50	30	48	27	40	43	72	87	100	89	100	82	93	100	100	100	100	100	100
25....	*	*	*	*	*	*	*	*	*	*	*	*	87	100	90	100	89	93	100	100	100	100	100	100
30....	*	*	*	*	*	*	*	*	*	*	*	*	100	100	100	100	100	100	100	100	100	100	100	100

\*Signifies instance in which mortality in check exceeded 10%.  
\*\*BAC = BACTIMOS, TEK = TEKNAR, VEC = VECTOBAC.

LABORATORY TESTS

Red imported fire ant: *Solenopsis invicta* Buren

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EFFICACY OF ORGANOFLOURINE COMPOUNDS AGAINST THE RED IMPORTED FIRE ANT, 1980: Twenty worker ants from laboratory colonies of the red imported fire ant (RIFA) starved for 14 days were placed in 30-ml disposable plastic cups modified to provide a humid environment. Candidate chemicals were dissolved in once refined soybean oil (SBO) and presented to the ants on a cotton swab placed in a vial cap that was then placed in 1 of the cups. The ants were allowed to feed on the treated SBO for 24 h, after which, the treated cotton swabs were removed. After another 24 h fresh vial caps with untreated SBO saturated cotton swabs were made available to the ants for the duration of the test. Mortality counts were made at intervals of 1, 2, 3, 6, 8, 10 and 14 days after initial exposure. Each test consisted of 3 replications at 3 concentrations, 1.0, 0.1 and 0.01%. Room temperature was maintained at 26.7 ± 2.2°C. A SBO control and a mirex standard were used in all tests. Based on encouraging USDA screening results for 3 fluorinated alcohols (AI3-23780-23782) from several years ago, we tested 28 commercially available fluorinated compounds. Four compounds showed significant delayed toxicity at 1.0%; however, these compounds did not have activity at lower concentrations. Although none of the compounds tested appeared to be suitable fire ant toxicants, the results were encouraging and our laboratory is investigating other organoflourine compounds for toxicity against these ants.

AI3-Number	Treatment compound name	Concn(%)	Percent kill after day						
			1	2	3	6	8	10	14
23780.....	1H,1H,5H-octafluoro-1-pentanol..... (Tested 1974)	0.01.....	0	5	15	15	18	18	18
		0.1.....	13	45	50	53	55	55	55
		1.0.....	8	15	18	20	20	20	28
23781.....	1H,1H,7H-dodecafluoro-1-heptanol..... (Tested 1970)	0.01.....	0	0	0	8	10	13	18
		0.1.....	0	3	3	13	15	20	35
		1.0.....	0	3	8	43	53	55	66
23782.....	1H,1H,9H-Hexadecafluoro-1-nonanol..... (Tested <1967)	0.01.....	9	10	26	31	34	40	68
		0.1.....	9	23	30	44	51	53	69
		1.0.....	10	60	88	98	98	98	100
25488-a.....	1H,1H,11H-eicosafluoro-1-undecanol.....	0.01.....	3	10	12	13	13	17	20
		0.1.....	0	0	2	12	13	13	25
		1.0.....	0	2	7	8	13	13	82
70872.....	1H,1H-pentadecafluoro-1-octanol.....	0.01.....	0	2	2	3	7	10	15
		0.1.....	0	2	2	5	15	20	47
		1.0.....	0	0	0	8	17	17	47
29340-a.....	3,3,4,4,5,5-Heptafluoro-2-pentanol.....	0.01.....	0	0	2	2	7	8	17
		0.1.....	2	2	5	17	23	23	40
		1.0.....	0	0	0	5	7	8	18
29339-a.....	1H,1H-heptafluoro-1-butanol.....	0.01.....	0	7	10	12	22	28	47
		0.1.....	0	2	2	13	22	27	52
		1.0.....	0	3	3	13	27	33	43
70873.....	Hexafluoro-2-(p-tolyl) isopropanol.....	0.01.....	0	2	8	15	18	23	30
		0.1.....	0	0	0	2	2	2	5
		1.0.....	2	2	3	10	12	13	17
70874.....	2,2,3,3,4,4-Hexafluoro-1,5-pentanediol.....	0.01.....	0	2	2	7	12	13	18
		0.1.....	0	2	5	10	12	13	18
		1.0.....	2	2	5	12	17	20	23

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63151-a.....Hexafluorovaline.....	0.01.....	0	3	5	7	8	8	8	
	0.1.....	0	0	2	5	5	7	13	
	1.0.....	0	0	0	0	0	2	7	
70875.....Chlorodifluoroacetophenone.....	0.01.....	0	2	3	7	10	10	20	
	0.1.....	0	3	8	18	18	18	23	
	1.0.....	3	5	5	47	72	83	98	
70876.....Trifluoroacetophenone.....	0.01.....	0	0	2	3	7	10	12	
	0.1.....	0	0	2	13	13	13	22	
	1.0.....	0	0	2	5	7	7	12	
70877.....Pentafluoroacetophenone.....	0.01.....	0	0	0	8	10	12	23	
	0.1.....	0	2	5	8	12	13	25	
	1.0.....	0	5	18	35	38	53	77	
70878.....o-Trifluoromethylacetophenone.....	0.01.....	0	0	0	5	5	5	10	
	0.1.....	0	0	0	2	2	2	8	
	1.0.....	3	5	8	12	20	20	20	
70879.....m-Trifluoromethylacetophenone.....	0.01.....	0	0	0	0	2	5	20	
	0.1.....	0	0	0	2	3	3	5	
	1.0.....	0	0	2	7	7	7	10	
70880.....p-trifluoromethylacetophenone.....	0.01.....	2	2	2	10	15	20	32	
	0.1.....	0	0	0	2	3	3	5	
	1.0.....	0	2	2	12	15	15	27	
Mirex (standard).....	0.01.....	10	18	27	37	73	82	95	
	0.1.....	8	15	97	100				
	1.0.....	10	100						
SBO (check).....	1.0.....	10	100						
	--	2	5	8	17	18	23	26	
	<u>Series 2</u>								
70881.....o-Fluoroanisole.....	0.01.....	5	10	12	15	17	20	33	
	0.1.....	2	3	3	7	10	12	17	
	1.0.....	3	7	12	15	20	22	33	
70882.....m-Fluoroanisole.....	0.01.....	3	5	7	8	12	15	18	
	0.1.....	0	2	2	5	5	8	18	
	1.0.....	2	8	12	20	25	28	42	
10595.....p-Fluoroanisole.....	0.01.....	2	3	7	12	15	17	30	
	0.1.....	0	0	2	3	10	18	20	
	1.0.....	0	0	2	7	10	10	20	
70883*.....11H-eicosafuoroundecanoic acid.....	0.01.....	0	0	2	5	12	13	17	
	0.1.....	0	0	3	3	7	8	17	
	1.0.....	2	10	25	35	58	68	90	
70884*.....Perfluorodecanoic acid.....	0.01.....	2	10	15	20	22	27	42	
	0.1.....	0	0	0	3	3	7	17	
	1.0.....	0	2	2	3	7	17	45	
19341*.....Perfluorooctanoic acid.....	0.01.....	3	3	3	5	7	7	20	
	0.1.....	2	3	5	8	10	12	27	
	1.0.....	10	12	18	25	35	40	70	
70885*.....m-Fluorobenzoic acid.....	0.01.....	0	0	3	10	13	17	22	
	0.1.....	0	0	3	7	8	10	28	
	1.0.....	0	2	2	3	8	12	13	
33424-a.....o-Fluorobenzoic acid.....	0.01.....	2	2	5	10	17	22	30	
	0.1.....	0	0	2	3	7	8	13	
	1.0.....	0	2	2	5	8	10	23	
70886**.....p-Fluorobenzoic acid.....	0.01.....	3	5	12	17	20	22	30	
	0.1.....	0	0	0	2	2	5	8	
	1.0.....	0	3	5	8	13	15	17	
63060-a*.....2,6-Difluorobenzoic acid.....	0.01.....	0	3	5	8	13	15	17	
	0.1.....	2	2	3	7	7	13	13	
	1.0.....	0	3	5	7	7	10	10	
70887*.....Perfluoroglutaric acid.....	0.01.....	3	3	7	10	13	15	22	
	0.1.....	0	2	2	2	2	8	10	
	1.0.....	0	3	7	12	15	17	28	
70889*.....m-Carboxybenzotrifluoride.....	0.01.....	0	2	3	5	7	7	7	
	0.1.....	2	5	8	12	18	22	30	
	1.0.....	0	3	5	8	13	15	20	
70890*.....2-Chloro-5-trifluoromethylbenzophenone.....	0.01.....	2	2	5	8	8	10	13	
	0.1.....	0	2	3	5	7	7	10	
	1.0.....	0	0	3	5	8	13	32	
70891.....Decafluorobenzophenone.....	0.01.....	0	0	0	3	3	8	8	
	0.1.....	0	0	0	2	2	3	18	
	1.0.....	13	80	85	93	95	95	98	
70892.....Pentafluoroethylphenyl ketone.....	0.01.....	2	2	2	3	3	3	5	
	0.1.....	2	3	3	5	7	8	8	
	1.0.....	0	0	3	7	8	13	22	
Mirex (standard).....	0.01.....	0	0	0	0	3	10	80	
	0.1.....	2	2	43	90	98	98	100	
	1.0.....	2	72	100					
SBO (check).....	1.0.....	0	0	1	2	3	4	4	

\*Compound required 5 drops of DMF for complete solution (total volume 11 ml).  
\*\*Compound required 25 drops of DMF for complete solution (total volume 11 ml).