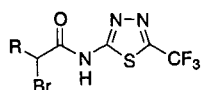
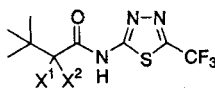




**Table 1.** Effect of substituent R on activity against *Tetranychus urticae*

No.	R	mp (°C)	Activity rating ( <i>Tetranychus urticae</i> )			
			500	200	50	12.5 (ppm)
1	H	150-152	0	- <sup>a)</sup>	-	-
2	CH <sub>3</sub>	138-140	0	-	-	-
3	C <sub>2</sub> H <sub>5</sub>	124-125	0	-	-	-
4	<i>n</i> -C <sub>3</sub> H <sub>7</sub>	124-126	1	0	-	-
5	<i>i</i> -C <sub>3</sub> H <sub>7</sub>	131-132	3	1	-	-
6	<i>n</i> -C <sub>4</sub> H <sub>9</sub>	102-104	0	-	-	-
7	<i>i</i> -C <sub>4</sub> H <sub>9</sub>	117-119	0	-	-	-
8	<i>s</i> -C <sub>4</sub> H <sub>9</sub>	108-110	3	3	2	1
9	<i>t</i> -C <sub>4</sub> H <sub>9</sub>	151-153	3	3	3	1
10	<i>t</i> -C <sub>5</sub> H <sub>11</sub>	155-156	2	2	1	0
11	<i>cyclo</i> -C <sub>5</sub> H <sub>9</sub>	130-132	1	0	-	-
12	<i>cyclo</i> -C <sub>6</sub> H <sub>11</sub>	148-150	1	0	-	-

<sup>a)</sup> Not tested.**Table 2.** Effect of substituents X<sup>1</sup> and X<sup>2</sup> on activity against *Tetranychus urticae*

No.	X <sup>1</sup>	X <sup>2</sup>	mp (°C)	Activity rating ( <i>Tetranychus urticae</i> )			
				500	200	50	12.5 (ppm)
13	H	H	117-119	0	- <sup>a)</sup>	-	-
9	Br	H	151-153	3	3	3	1
14	Br	Br	147-149	3	3	3	1
15	Cl	H	162-163	3	3	3	1

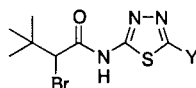
<sup>a)</sup> Not tested.

Tables 3 and 4 show the effect of substituent (Y) at 5-position of thiadiazole ring. Unsubstituted (**20**) and alkyl analogs (**21,22**) did not show any activity at 500 ppm (Table 3). In the case of monobromo analogs, the trifluoromethyl analog (**9**) showed the highest activity (Table 3). However, in the case of the dibromo analogs, the pentafluoroethyl (**23**), heptafluoropropyl (**24**) and nonafluorobutyl (**25**) analogs also showed high activity (Table 4). Among these, 2,2-dibromo-3,3-dimethyl-*N*-(5-pentafluoroethyl-1,3,4-thiadiazol-2-yl)butanamide (**23**) showed the

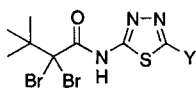
highest activity.

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**Table 3.** Effect of substituent Y on activity against *Tetranychus urticae*

No.	Y	mp (°C)	Activity rating ( <i>Tetranychus urticae</i> )			
			500	200	50	12.5 (ppm)
9	CF <sub>3</sub>	151-153	3	3	3	1
16	CF <sub>2</sub> CF <sub>3</sub>	201-203	3	2	2	1
17	(CF <sub>2</sub> ) <sub>2</sub> CF <sub>3</sub>	201-202	2	1	1	1
18	(CF <sub>2</sub> ) <sub>3</sub> CF <sub>3</sub>	196-197	0	- <sup>a)</sup>	-	-
19	(CF <sub>2</sub> ) <sub>4</sub> CF <sub>3</sub>	166-167	0	-	-	-
20	H	212-213	0	-	-	-
21	CH <sub>3</sub>	217-219	0	-	-	-
22	C <sub>2</sub> H <sub>5</sub>	190-192	0	-	-	-

<sup>a)</sup> Not tested.**Table 4.** Effect of substituent Y on activity against *Tetranychus urticae*

No.	Y	mp (°C)	Activity rating ( <i>Tetranychus urticae</i> )				
			500	200	50	12.5	3.13 (ppm)
14	CF <sub>3</sub>	147-149	3	3	3	1	- <sup>a)</sup>
23	CF <sub>2</sub> CF <sub>3</sub>	152-154	3	3	3	2	1
24	(CF <sub>2</sub> ) <sub>2</sub> CF <sub>3</sub>	142-143	3	3	2	0	-
25	(CF <sub>2</sub> ) <sub>3</sub> CF <sub>3</sub>	89-91	3	3	3	1	-

<sup>a)</sup> Not tested.

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