

Report of Pesticide Residue Levels in Vegetables Analysed in Year 2015

307 samples were collected from farm gate level by Extension Officers of FAREI, with the objective to trace back the farmer in case the pesticide residues were above the Maximum Residue Level (MRL) of FAO Codex Alimentarius. Samples were collected in different regions around the island and they included the following: asparagus bean (voehm), beans, bitter gourd, broccoli, calabash, cabbage, cauliflower, carrot, chilli, courgette, cucumber, coriander leaves, eggplant, okra, tomato, greens (brèdes), pumpkin, snake gourd (patole), Chinese cabbage (petsai), ridge gourde (pipengaille), spring onion (queue d'oignon), avocado, pawpaw, bilimbi, banana and pineapple.

The samples were analysed using Gas Chromatograph with Mass Spectrometry (GCMSMS) and Liquid Chromatograph with Mass Spectrometry (LCMSMS) for the detection of the following pesticides: azoxytrobin, boscalid, carbofuran, chlorothalonil, cyfluthrin, cypermethrin, chlorpyrifos, deltamethrin, difenoconazole, hexaconazole, indoxacarb, fenthion, fluopicolid, lambda cyhalothrin, lufenuron, malathion, metalaxyl, profenofos, pyraclostrobin, spiromesifen, spinosad, tebuconazole and vinclozolin.

Out of 307 samples analysed, in 72% of samples no pesticide residues were detected, in 24% presence of pesticide residues were below the Codex Maximum Residue Level (MRL) and 4% exceeded the Codex MRL. The results are shown in the following tables.

Table 1 showing pesticide residues in samples analysed

SN	Samples	No. of samples analysed	No. of samples having NO pesticide residues	No. of samples having pesticide residues BELOW MRL	No. of samples having pesticide residues ABOVE MRL
1	Asparagus beans (Voem)	4	4	Nil	Nil
2	Beans	12	10	2	Nil
3	Chilli/pepper	9	3	6	Nil
4	Cucumber	19	10	6	3
5	Other cucurbits (chouchou, pumpkin, courgette, squash, snake gourd, ridge gourd, bitter gourd)	60	45	11	4
6	Tomato	17	9	8	Nil
7	Brinjal	37	25	9	3
8	Brassica (cabbage, cauliflower, broccoli, Chinese cabbage)	24	21	3	Nil
9	Calabash	28	25	3	Nil
10	Green spices (coriander leaves, spring onion)	7	2	5	Nil
11	Root and tuber vegetables (carrot, turnip, beetroot, potato, taro)	16	12	1	3
12	Lettuce	10	7	3	Nil
13	Lady finger (okra)	18	15	3	Nil
14	Greens (bredes – chouchou, giraumon, de chine, malbar, tom pouce, baton blanc)	28	18	10	Nil
17	Fruits (grapefruit, avocado, banana, pawpaw, bilimbi, pineapple)	18	15	3	Nil
TOTAL		307	221	73	13
Percentage (%)		72	24	4

Table 2 showing pesticide residue levels detected in vegetables

Vegetables with insecticides above MRL	Insecticides detected	Amount Detected (mg/kg)	FAO Codex MRL (mg/kg)	No. of times exceeding MRL
(i) cucumber	Cypermethrin <i>(also found metalaxyl below MRL)</i>	0.08	0.07	1.14
(ii) carrot	Cypermethrin <i>(also found difenococonazole, chlorothalonil and metalaxyl below MRL and hexaconazole – no MRL available for carrot)</i>	0.06	0.01 (root)	6
(iii) Cucumber	λ-cyhalothrin <i>(also found metalaxyl and cyfluthrin below MRL)</i>	0.06	0.05	1.2
(iv) Cucumber	Cypermethrin <i>(also found metalaxyl below MRL)</i>	0.27	0.07	3.9
(v) Ridge Gourd (pipengaille)	Cypermethrin <i>(also found fenthion and metalaxyl below MRL)</i>	0.08	0.07	1.14
(vi) Rave	λ-cyhalothrin <i>(also found cypermethrin below MRL)</i>	0.04	0.01 (root & tuber)	4
(vii) Arouille	λ-cyhalothrin <i>(also found cypermethrin below MRL)</i>	0.13	0.01 (root)	13
(viii) Brinjal	Cypermethrin	0.08	0.03	2.7
(xi) Bitter Gourd	Cypermethrin	0.29	0.07	4.1
(x) Brinjal	Cypermethrin	0.17	0.03	5.7
(xi) Ridge Gourd (pipengaille)	λ-cyhalothrin <i>(also found cypermethrin)</i>	0.07	0.05	1.4
(xii) Bitter Gourd	Cypermethrin	0.20	0.07	2.9
(xiii) Brinjal	Cypermethrin	0.10	0.03	3.3

Ethephon Analysis in Pineapple – January 2016

SN	Date received	Lab. Code	Client code	Locality	Amount Detected (mg/kg)
1.	18.01.2016	C/7/16	E3/4/16/01	Constance	0.29
2.	18.01.2016	C/8/16	Batch EG 001	Exogreen Ltd	1.48
3.	02.02.2016	C/20/16	N1/10/16/004	Les Mariannes	NDL
4.	09.02.2016	C/30/16	E2/UT/16/01	Camp De Masque Pavé	0.46
5.	16.02.2016	C/36/16	-	Clemencia	82.4*
6.	18.02.2016	C/41/16	-	Clemencia	0.23
7.	22.02.2016	C/51/16	-	Clemencia	1.23
8.	23.02.2016	C/53/16	-	Clemencia	1.11
9.	29.02.2016	C/62/16	N4/03/16/14	-	0.99

N.B:- MRL for Ethephon in pineapple is set at **2mg/kg**.

- NDL-No Detectable Level

- * samples were collected on the day of application of ethephon from the field.

