

Status of Agricultural Pesticides use in major vegetable production areas in Tanzania

Objective: To obtain information on pesticides used in vegetable production and how they are being used relative to recommendations.

Methods and materials: Data on pesticides available in the market and used in vegetable production was collected in the period from July to December 2015 in Mbeya, Morogoro, Dar es Salaam, Dodoma and Arusha regions, representing the Southern Highlands, Eastern, Central and the Northern agro-ecological zones of Tanzania, respectively. A total of 135 (26 females and 109 males) vegetable farmers were interviewed. Data was collected on farmers' general characteristics, knowledge on pesticide handling, use and storage. Information was also collected from pesticides dealers on the range of pesticides marketed and their interaction with farmers.

A desk study was conducted to review research reports on the resistance of pests to identified pesticides.

Results

- 84 % of respondent farmers applied pesticides as one of the production practices.
- 75.5% sprayed without targeting any particular pest. The practice constitutes the reason as to why farmers do mix pesticides.
- More than 76% of respondent farmers were tank mixing the pesticides. Farmers consider mixing pesticides as increasing the effectiveness.
- 46 insecticide and 23 fungicide products were used in the study area. Arusha followed by Mbeya regions led in number of pesticides brands used.
- Tomato is the vegetable crop on which the highest number of both insecticide and fungicide products were applied
- The majority of farmers did not use protective gear when applying pesticides and usually store the pesticides inside households.
- Misuse of pesticides was higher at lower education levels.

Conclusion

- A wide range of pesticides are available for vegetable production in Tanzania.
- Many farmers are not complying with recommended practices of safe handling and uses of pesticides. Training in safe use of pesticides is needed.
- There is over-dependency on pesticides. Introduction and dissemination of alternatives such as Integrated Pest Management (IPM) technologies are thus also needed.

Table 1: List of Insecticides used in vegetable production in the study areas

Sn	Brand (Trade) name	Active ingredient	Registration status in Tanzania
1	Murvectin	Abamectin	✓
2	Promectin	Abamectin	✓
3	Taranula	Abamectin	✓
4	Abamectin	Abamectin/Avermectin B1	X
5	Asataf	Acephate	✓
6	Blast	Acetamiprid + Lambda-cyhalothrin	✓
7	Coragen	Chlorantraniliprole	✓
8	Dursban	Chlorpyrifos	✓
9	Cypermethrin	Cypermethrin	✓
10	Dudu All	Cypermethrin + Chlorpyrifos	✓
11	Duduba	Cypermethrin + Chlorpyrifos	✓
12	Amekan	Cypermethrin + Imidacloprid	✓
13	Attakan C	Cypermethrin + Imidacloprid	✓
14	Farmguard	Cypermethrin + Imidacloprid	✓
15	Imida C	Cypermethrin + Imidacloprid	✓
16	Delta	Deltamethrin	✓
17	Dimethoste	Dimethoste	✓
18	Dume	Dimethoste	✓
19	Rogor	Dimethoste	✓
20	Spidex	Emamectin Benzoate	✓
21	Thionex	Endosulfan	✓
22	Sumithion	Fenitrothion + Tetramethrin	✓
23	Belt	Flubendiamide	✓
24	Imidacel	Imidacloprid	✓
25	Karate	Lambda-cyhalothrin	✓
26	Ninja	Lambda-cyhalothrin	✓
27	Kung Fu	Lambda-cyhalothrin	✓
28	Match	Lufenuron	✓
29	Snowthion	Malathion	✓
30	Diazinon	Organophosphates	✓
31	Actellic	Pirimiphos-Methyl	✓
32	Farmactellic	Pirimiphos-Methyl	✓
33	Bamiphos (fos)	Pirimiphosmethyl + Permethrin	✓
34	Agrocron	Profenofos	X
35	Banophos (fos)	Profenofos	✓
36	Profecron	Profenofos	✓
37	Profen	Profenofos	✓
38	Selecron	Profenofos	✓
39	Snowcron	Profenofos	✓
40	Supercron	Profenofos	✓
41	Supergrino	Profenofos	✓
42	Insecron	Profenofos	✓
43	Wilcron	Profenofos	✓
44	Cscron	Profenofos	✓
45	Peprocron	Profenofos	✓
46	Wilngo Plus	Emamectin benzoate	X

Table 2: List of Fungicides used in vegetable production in the study areas

Sn	Trade Name	Active Ingredients	Registration Status in Tanzania
1	Victory	Carbendazim	✓
2	Bajuton	Chlorothalonil	✓
3	Ivory	Chlorothalonil	✓
4	Odeon	Chlorothalonil	✓
5	Oshothane	Chlorothalonil	✓
6	Linkonil	Chlorothalonil	✓
7	Bayleton	Copper Oxychloride	✓
8	Runner	Copper Oxychloride	✓
9	Tancop	Copper Oxychloride	✓
10	Blue Copper	Cupric Hydroxide	x
11	Wiltthane	Hexaconazole/triazole	✓
12	Dithane	Mancozeb	✓
13	Ebony	Mancozeb	✓
14	Mancozeb	Mancozeb	✓
15	Milthane	Mancozeb	✓
16	Xanto	Mancozeb	✓
17	Movil	Mancozeb + Metalaxyl	✓
18	Vetigol	Mancozeb + Metalaxyl	✓
19	Farmerzeb	Mancozeb or Mancozeb + Metalaxyl	✓
20	Ridomil	Methoxyfenozide	✓
21	Agrifos	Monopotassium + Dipotassium phosphonates	✓
22	Kunmulus	Sulphur	✓
23	Banko	Triadimefon	✓