

# **Pesticide use in Ethiopia**

Gizachew Assefa

Ministry of Agriculture

Addis Ababa

# INTRODUCTION

- **In Ethiopia the use of pesticides to control crop pests can be traced back to the mid 1940's when arsenic and later on BHC in bran bait were used to control desert locust outbreaks**
- **However the use of chemical pesticides against crop pests may be associated with the development of commercial farms in early 1960's.**

## **INTRODUCTION...cont.**

- **The use of agricultural inputs including pesticides were introduced to the small holder farmers through various agriculture extension systems since the 1960's**
- **Since then the use of pesticides showed a steady growth and currently with the development of the flower sector the importation of pesticides on average has reached to over 2400 tones per annum.**

# PESTICIDE IMPORTATION

- **Large quantities of pesticides are imported annually to Ethiopia.**
- **For example over 26000 tones of various types of pesticides were imported to the country in 2000 – 2010.**

# PESTICIDE IMPORTS VOLUME IN METRIC TONE

Year	Insecticides	Herbicides	Fungicides	Others	Total
2000	160.7	805.9	46.8	2.5	1015.9
2001	462.6	760.7	36.0	177.5	1436.8
2002	706.0	1136.0	71.0	171.0	2084.0
2003	359.0	868.5	77.0	323.0	1627.5
2004	407.0	915.7	114.0	322.8	1759.5
2005	455.6	1197.6	146.6	423.8	2223.7
2006	569.3	1821.1	135.7	801.6	3327.7
2007	595.7	1687.9	153.7	594.4	3031.7
2008	453.1	1634.9	141.7	212.7	2442.4
2009	376.8	3105.8	223.1	12.6	3718.3
2010	651.9	3146.8	387.3	25.4	4211.5
Average	472.5	1552.8	139.3	278.8	2443.4
Share in %	19.34	63.56	5.7	11.4	

# PESTICIDE REGISTRATION

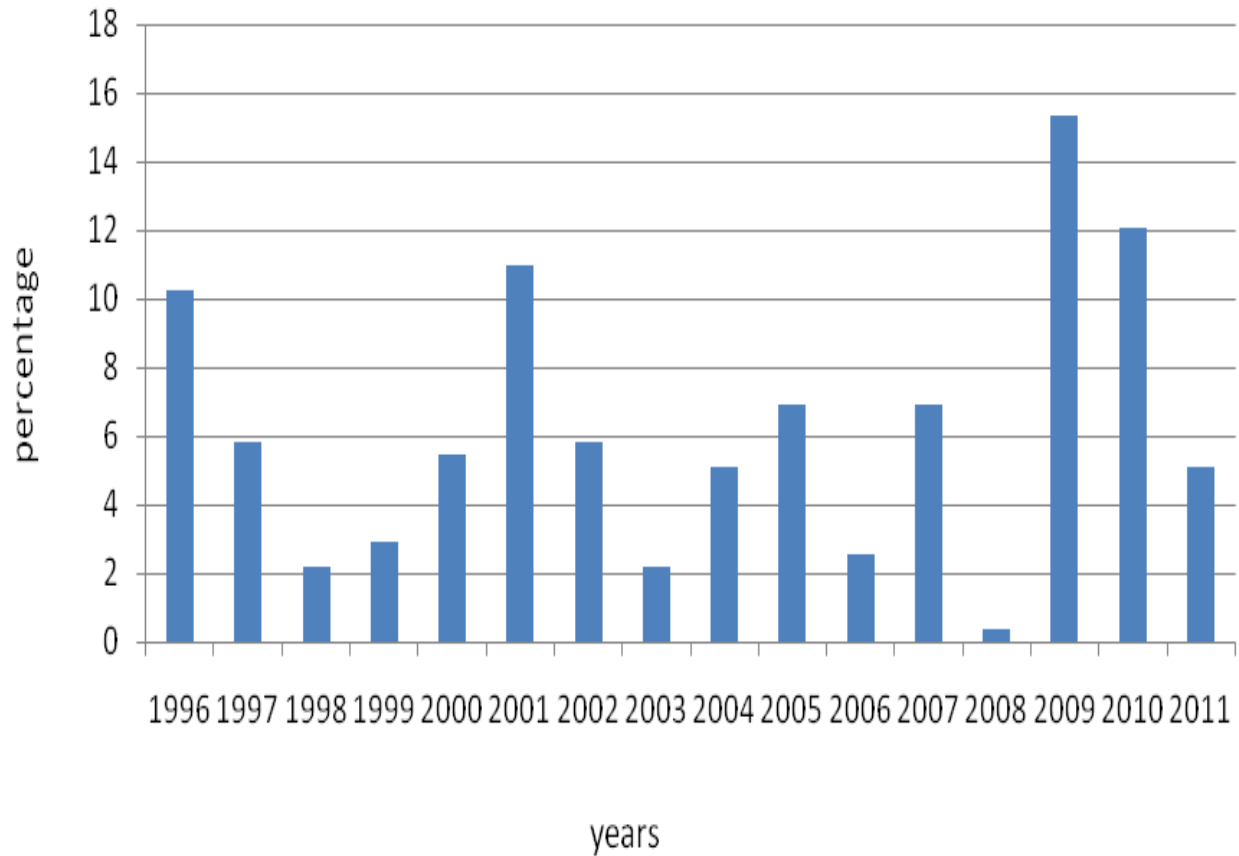
- Considering the risks associated with pesticide use, Ethiopia issued the first Pesticide Registration and Control Special Decree No. 20/1990 in the year 1990 to regulate importation, sale, distribution and use of pesticides.
- six years after the issuance of the decree, pesticide registration was started in 1996.

# Number of registered pesticide products in 1996-2011

Table 2 - Number of registered pesticide products in 1996-2011

Year	Insecticide	Herbicide	Fungicide	Acaricide	Nematicide	Rodenticide	Avicide	Aerosol	Others	Total
1996	18	6	4	-	-	-	-	-	-	28
1997	2	9	2	-	-	-	1	2	-	16
1998	-	1	3	-	-	2	-	-	-	6
1999	5	2	-	-	-	-	-	-	1	8
2000	15	-	-	-	-	-	-	-	-	15
2001	16	7	1	2	-	2	-	1	1	30
2002	6	4	3	-	-	-	-	3	-	16
2003	1	3	1	-	-	-	-	1	-	6
2004	6	5	3	-	-	-	-	-	-	14
2005	11	4	3	-	-	-	-	1	-	19
2006	4	2	1	-	-	-	-	-	-	7
2007	2	2	10	4	1	-	-	-	-	19
2008	-	1	-	-	-	-	-	-	-	1
2009	17	3	18	3	-	1	-	-	-	42
2010	9	9	14	-	-	-	-	-	1	33
2011	6	3	4	1	-	-	-	-	-	14
<b>Total</b>	<b>118</b>	<b>61</b>	<b>67</b>	<b>10</b>	<b>1</b>	<b>5</b>	<b>1</b>	<b>8</b>	<b>3</b>	<b>274</b>

Trend of registered pesticides in years





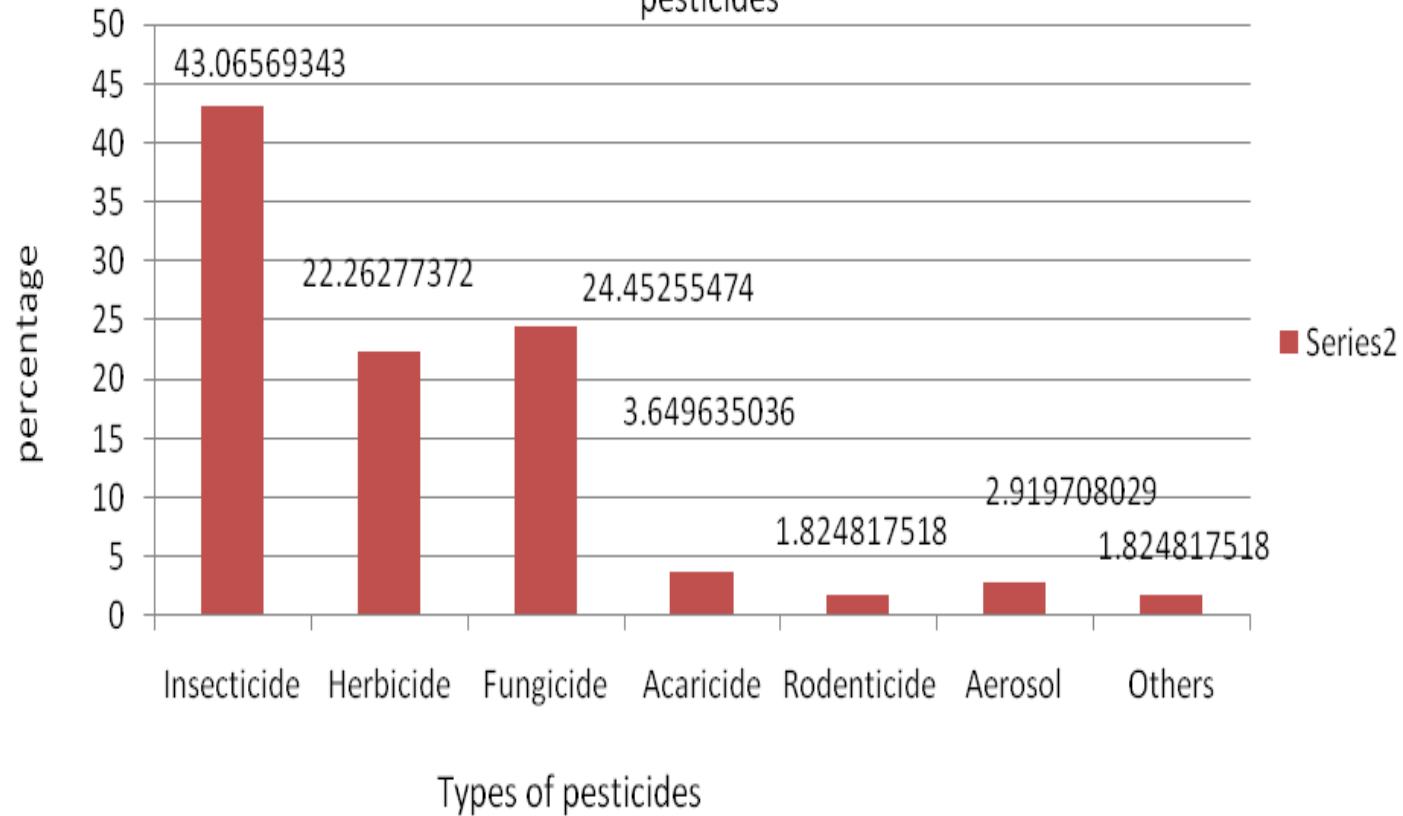
# REGISTERED PESTICIDE PRODUCTS IN 1996-2011

## Out of the total registered pesticides

- Insecticides constitute - 43.07 %
- Fungicides - 24.45 %
- Herbicides - 22.27 %
- Acaricides - 3.64 %
- Aerosols - 2.91 %
- Rodenticides - 1.82 %
- The remaining - 1.84 %

(Nem, Av, Gro. Reg.,  
anti-transpirants, adjuvants, etc. )

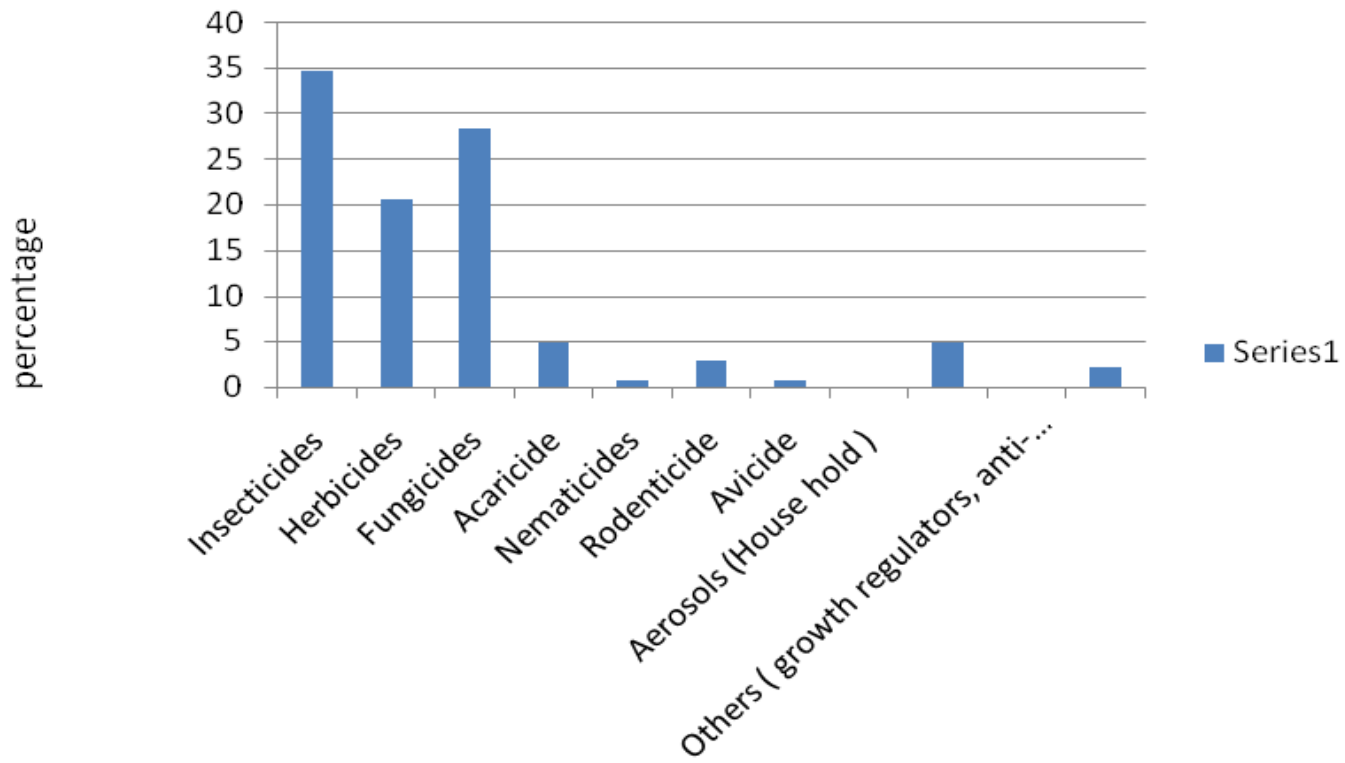
Percentage of types of registered pesticides



# REGISTERED ACTIVE INGREDIENTS IN 1996-2011

- A total of 141 active ingredients were registered through out the registration process.
- The proportion follows the same pattern as in the formulated products,
  - insecticides - 34.74 %
  - fungicides - 28.36 %
  - Herbicides - 20.56 %
  - Acaricides - 4.97 %
  - Aerosols - 4.69 %
  - Rodenticides - 2.84 %
  - The remaining - 3.84 %  
(Nem, Av, Gro. Reg.,  
anti-transpirants, adjuvants, etc. )

Percentage of Registered Active Ingredients

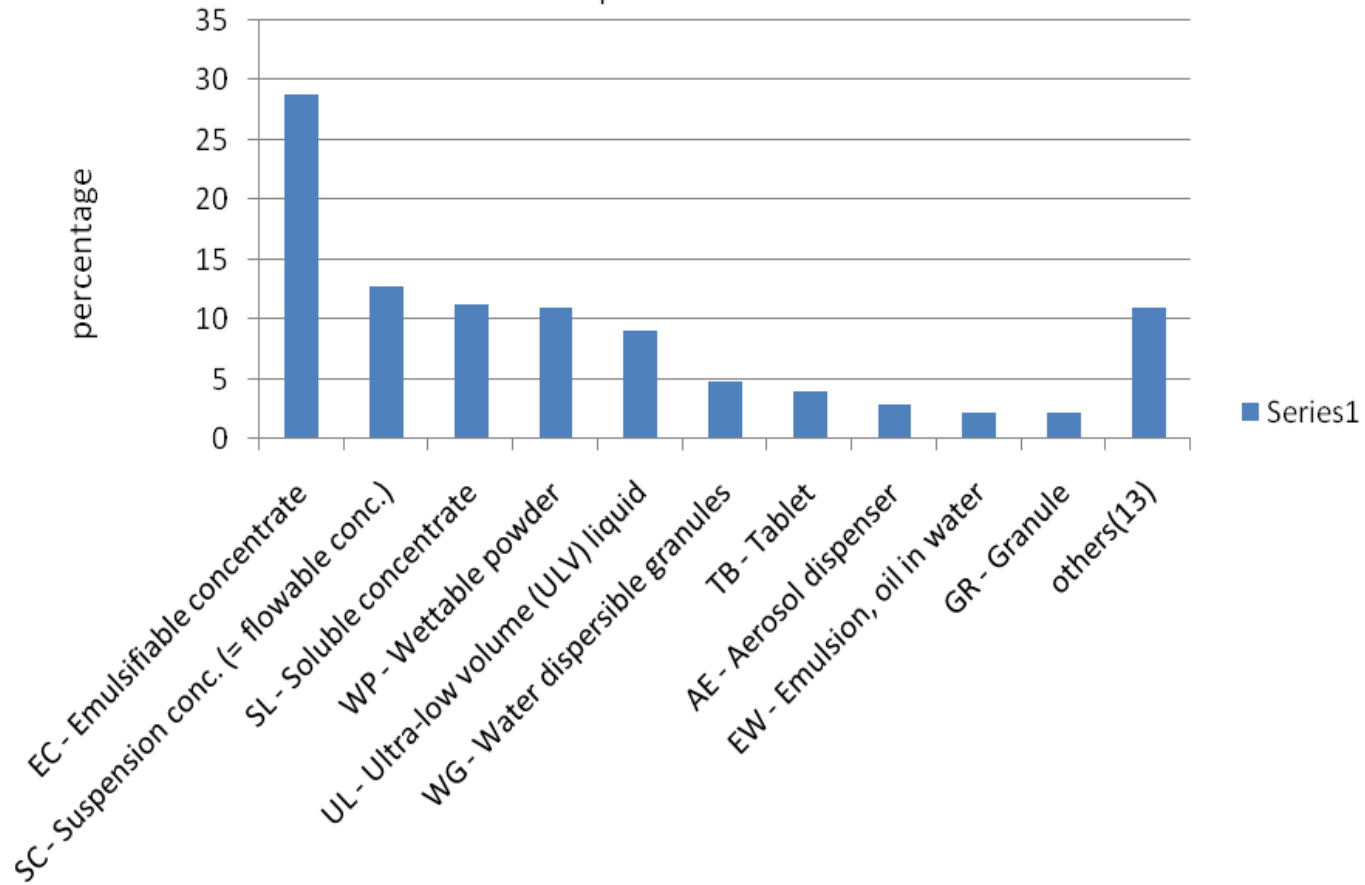


# REGISTERED FORMULATION TYPES IN 1996-2011

- Among the registered 274 pesticides, the important formulation types are

➤ Emulsifiable concentrate (EC)	- 79	- 28.83 %
➤ Suspension Concentrate (SC)	- 35	- 12.77 %
➤ Soluble Concentrate (SL)	- 31	- 11.31 %
➤ Wettable Powder (WP, WDP)	- 30	- 10.95 %
➤ Ultra Low Volume (ULV)	- 25	- 9.12 %
➤ TB - Tablet	- 11	- 4.01 %
➤ WG - Water dispersible granules	- 13	- 4.74 %
➤ AE -	- 8	- 2.92 %
➤ GR – Granule	- 6	- 2.19 %
➤ EW – Emulsion – Oil in water	- 6	- 2.19 %
• The remaining 14 types of formul. (CB,D,DC,DF,DP,EW,FS, GR,OD,PB,SP,TB,WDG,WG,)	- 30	- 10.95 %
<b>Total</b>	<b>274</b>	<b>- 100.00 %</b>

Percentage of formulations of registered pesticides



## Toxicity classification of the registered pesticides.

Toxicity Class ( WHO)	Number	Percentage
Class Ia	4	1.46
Class Ib	12	4.38
Class II	133	48.54
Class III	41	14.97
“U” Unlikely to cause hazard under normal use	40	14.60
FM (Fumigants)	10	3.65
NA (Not available)	34	12.40
<b>Total</b>	<b>274</b>	<b>100.00</b>

# Source of pesticides

- Pesticides used in the country are obtained through
  - Legal pesticide dealers
  - Government ( for the control of migrant pests)
  - illegal sources (contraband)



# List of most used pesticides in Ethiopia

Type of pesticide	Type of crop pesticide is registered for	Average/ tones 2006-2010
<b>2,4-D 720 g/l</b>	<b>Tef and wheat</b>	<b>1890</b>
<b>Glyphosate 36% EC</b>	<b>Coffee and citrus</b>	<b>221</b>
<b>Endosulfan 25% ULV, 35% EC</b>	<b>Cotton and Maiz</b>	<b>157</b>
<b>Methylaxyl +mancozeb 72% WP</b>	Potato, Tomato, Onion, Pepper and grape	116
<b>Aluminium Phosphide 56% Tablate</b>	Stored maize	96

# List of most used pesticides in Ethiopia in 2006-2010

Type of pesticide	Type of crop pesticide is registered for	Average/ tones 2006-2010
Lambda cyhalothrin 5% EC	Cotton and maize	63
Atrazine + Ametryn 50% SC	Sugarcane	42
Dimethoate 40% EC	Beans, Cabbage and Potato	38
Malathion 50% EC	Cereals	36
Alpha cypermethrine 10% EC, 7.5 G/L ULV	Cotton and Maize	34

# List of most used pesticides in Ethiopia in 2006-2010

Type of pesticide	Type of crop pesticide is registered for	Average/ tones 2006-2010
Metolachlore +Atrazine 66% SC	Maize	32
Carbosulfan 20-25% EC/ULV	Cotton	28
Profenofos	Maize	20

## Pesticides used for the control of migratory pests 2006-2010

Year	Locust	Armyworm	Quelea birds	Total
2006	-	81367	880	82247
2007	-	25960	1450	27410
2008	19594	121867	2675	144136
2009	2000	-	700	2700
2010	-	200000	3270	203270

## Crop area by size of farms 2007/2008 source CSA

<b>Crop</b>	<b>Smallholder 000'Ha.</b>	<b>Large farms 000'Ha.</b>	<b>Total 000'Ha.</b>
<b>Cereals</b>	<b>9125</b>	<b>159</b>	<b>9284</b>
Tef	2634	5	2639
Barley	1127	1	1128
Wheat	1490	33	1523
Maize	2279	54	2333
Sorghum	1595	66	1661

**Crop area by size of farms 2007/2008**  
**source CSA**

<b>Crop</b>	<b>Smallholder 000'Ha.</b>	<b>Large farms 000'Ha.</b>	<b>Total 000'Ha.</b>
Pulses	1706	20	1726
Sesame	186	118	304
Oil seeds	719	122	841
Vegetables	119	11	130
Root crops	184	8	192

**Crop area by size of farms 2007/2008**  
**source CSA**

<b>Crop</b>	<b>Smallholder 000'Ha.</b>	<b>Large farms 000'Ha.</b>	<b>Total 000'Ha.</b>
Fruit crops	63	5	68
Sugarcane	21	23	45
Coffee	407	54	461
Cotton	-	42	42
Perenial crops	-	5	5

# Pesticide application

- Small holder farmers
  - Knapsack sprayers
- Commercial and state farms
  - knapsacks, tractor mounted sprayers and aircrafts
- Migratory pest control
  - Knapsacks, ULV sprayers, motorized Knapsacks, aircrafts



**THANK YOU !**