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Agriculture and Pesticide Consumption in Bangladesh



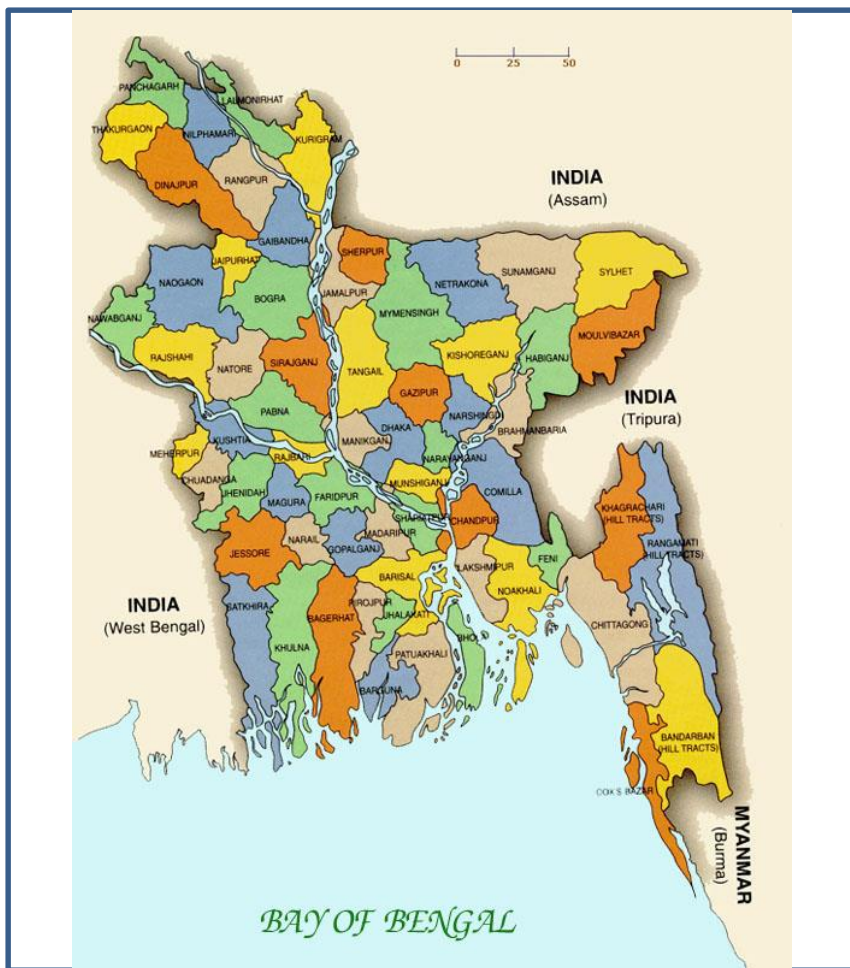
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Associate Professor

Department of Plant Pathology, Faculty of Agriculture

Sher-e-Bangla Agricultural University

Dhaka, Bangladesh



BANGLADESH

- **Division : 08**
- **District: 64**
- **Upazilla : 491**
- **Union : 4554**
- **Village: 87,223**
- **Total Population: 158.5 million**
- **Male: 79.6 million**
- **Female: 78.9 million**





Food Security Strategies

- **Annual Food Production: 31.9m MT**
- **Annual Food demand : 31.9m MT**
- **Self-sufficiency in food: 2012**
- **Ensuring food security: 2017 (a+a+n)**
- **Middle Income Country: 2022**

*(a+a+n=Availability, accessibility and nutrition)





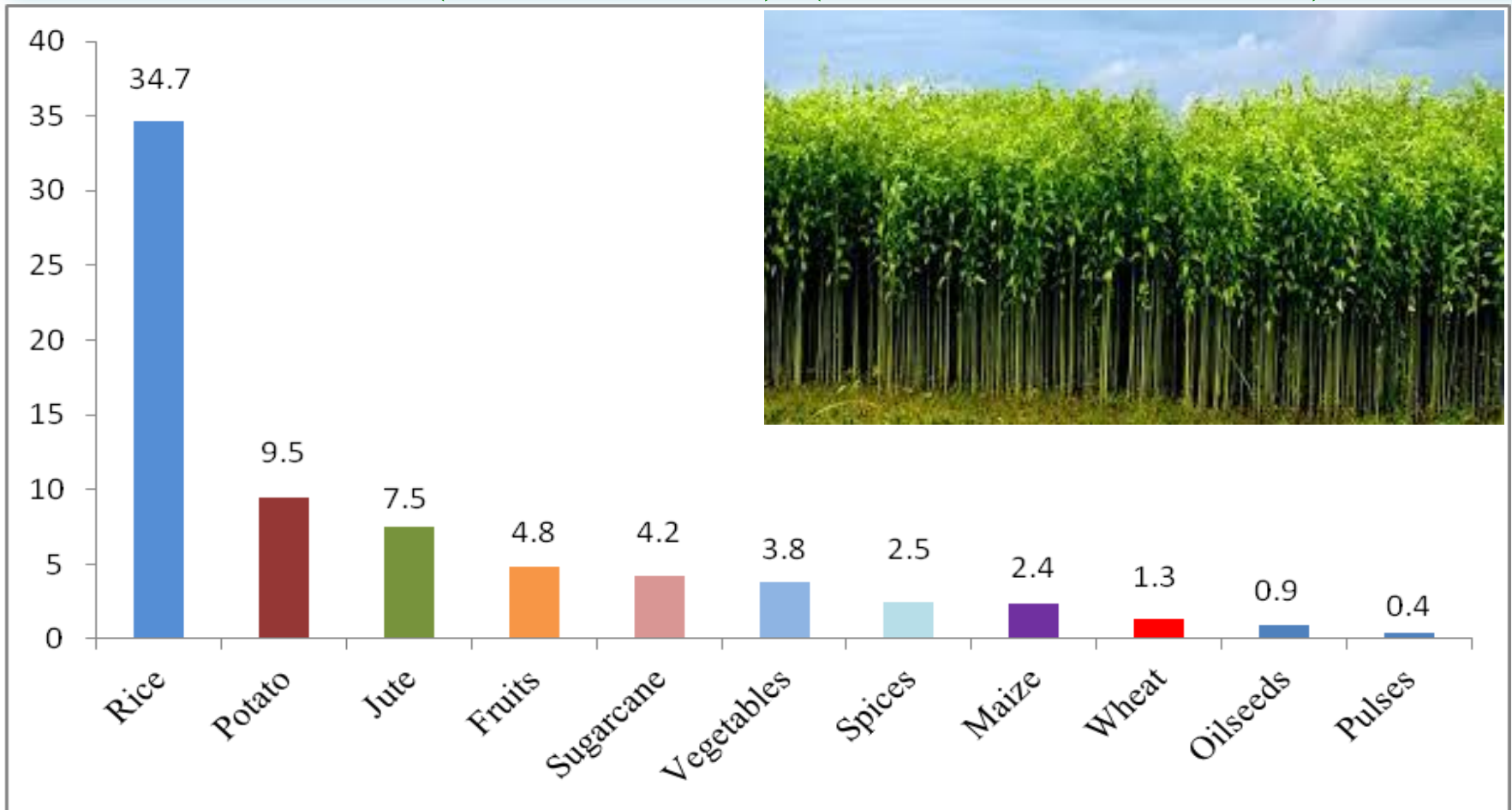
Success of Bangladesh in Agriculture in the World

- ✓ **2nd in Jute production**
- ✓ **3rd in Vegetable production**
- ✓ **4th in Rice production**
- ✓ **4th in Fish (fresh water) production**
- ✓ **4th in Goat production**
- ✓ **4th in Tea production**
- ✓ **6th in Mango Production**
- ✓ **8th in Guava production**
- ✓ **8th in Potato production**



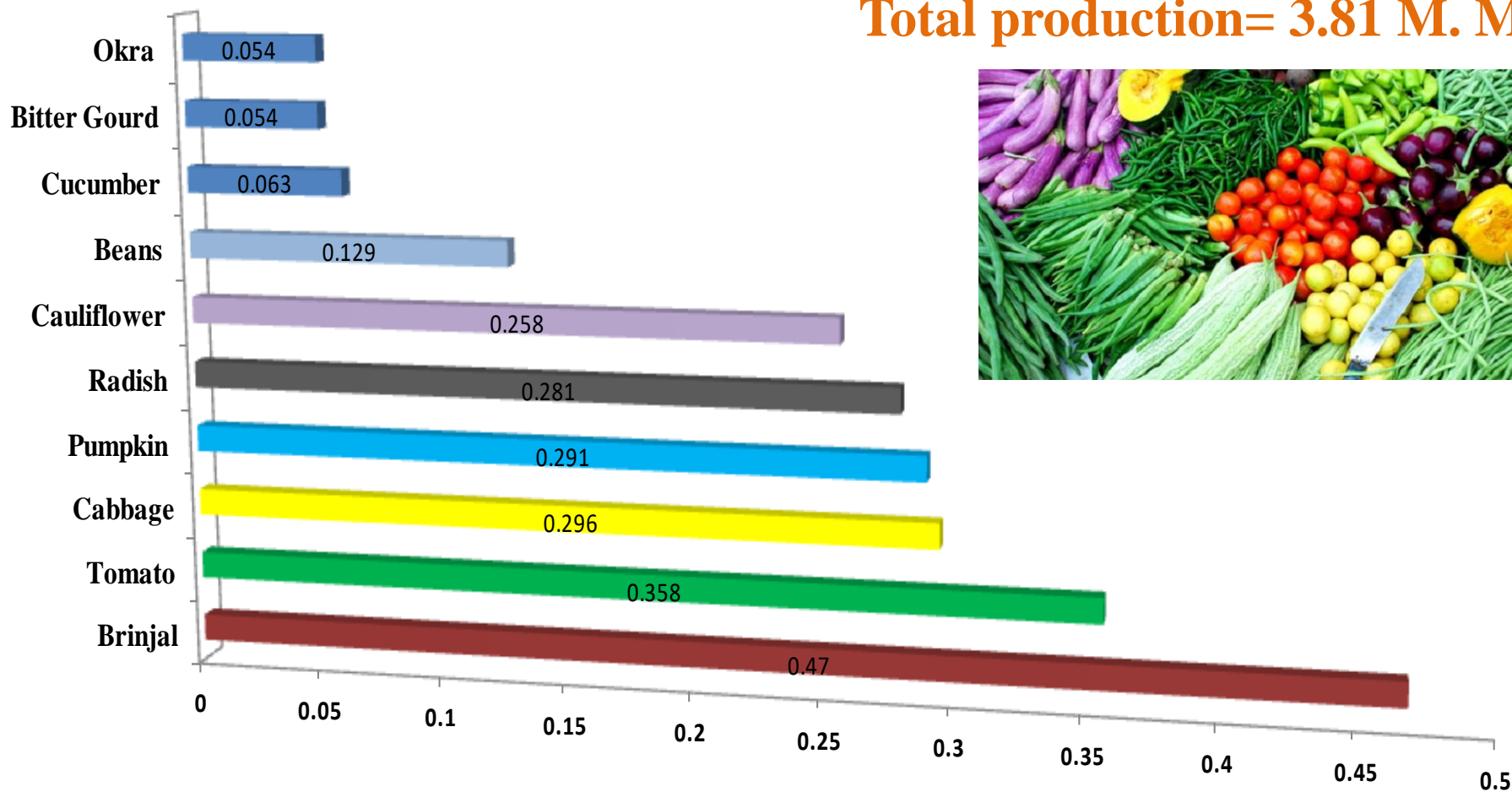


Production of major crops in Bangladesh, 2015-16 (Million MT) (Source: BBS 2016)



Production of major vegetables in Bangladesh, 2015-16

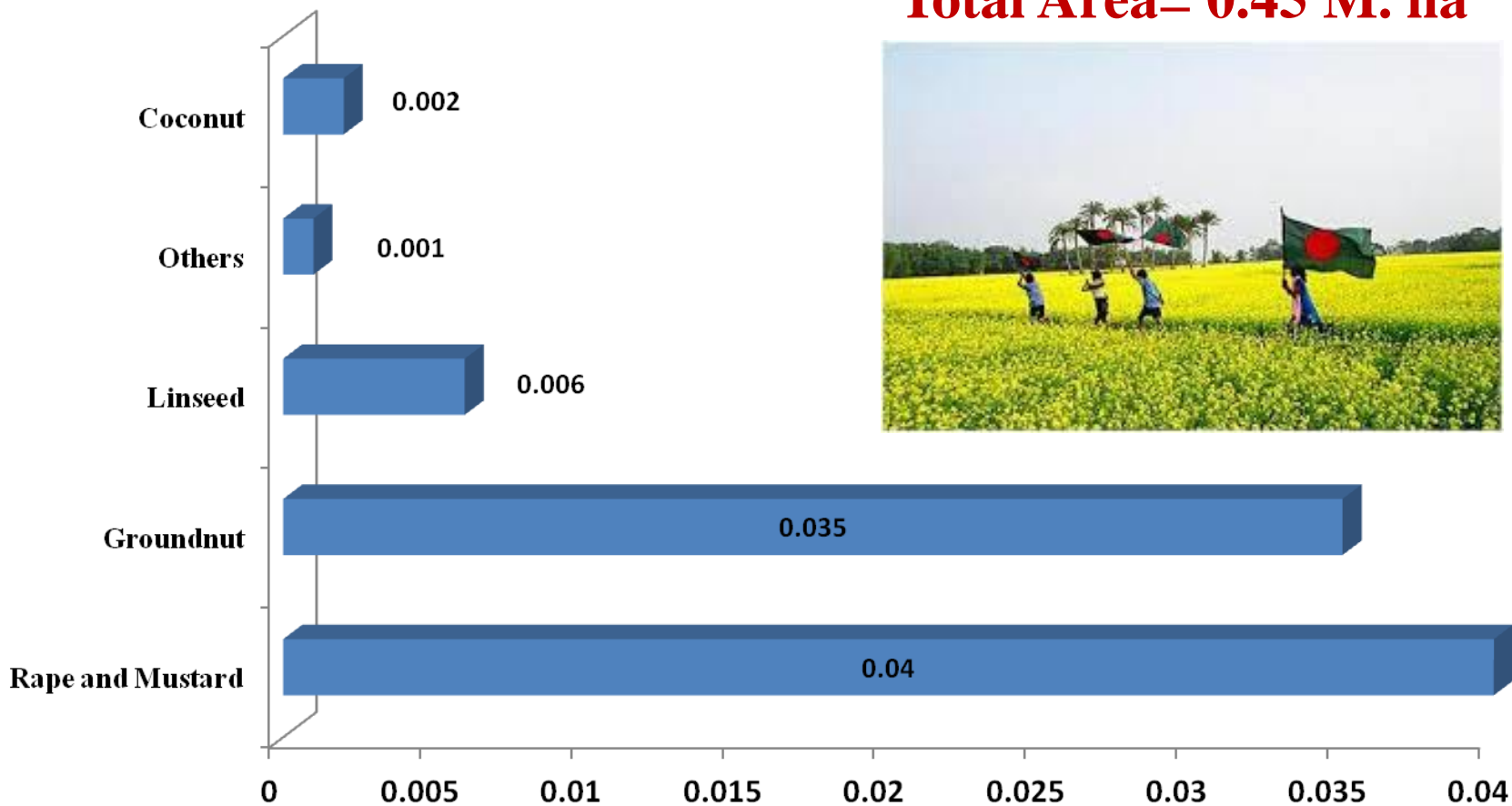
Total production= 3.81 M. MT





Area under Oilseeds Cultivation, 2015-16 (M. ha)

Total Area= 0.45 M. ha

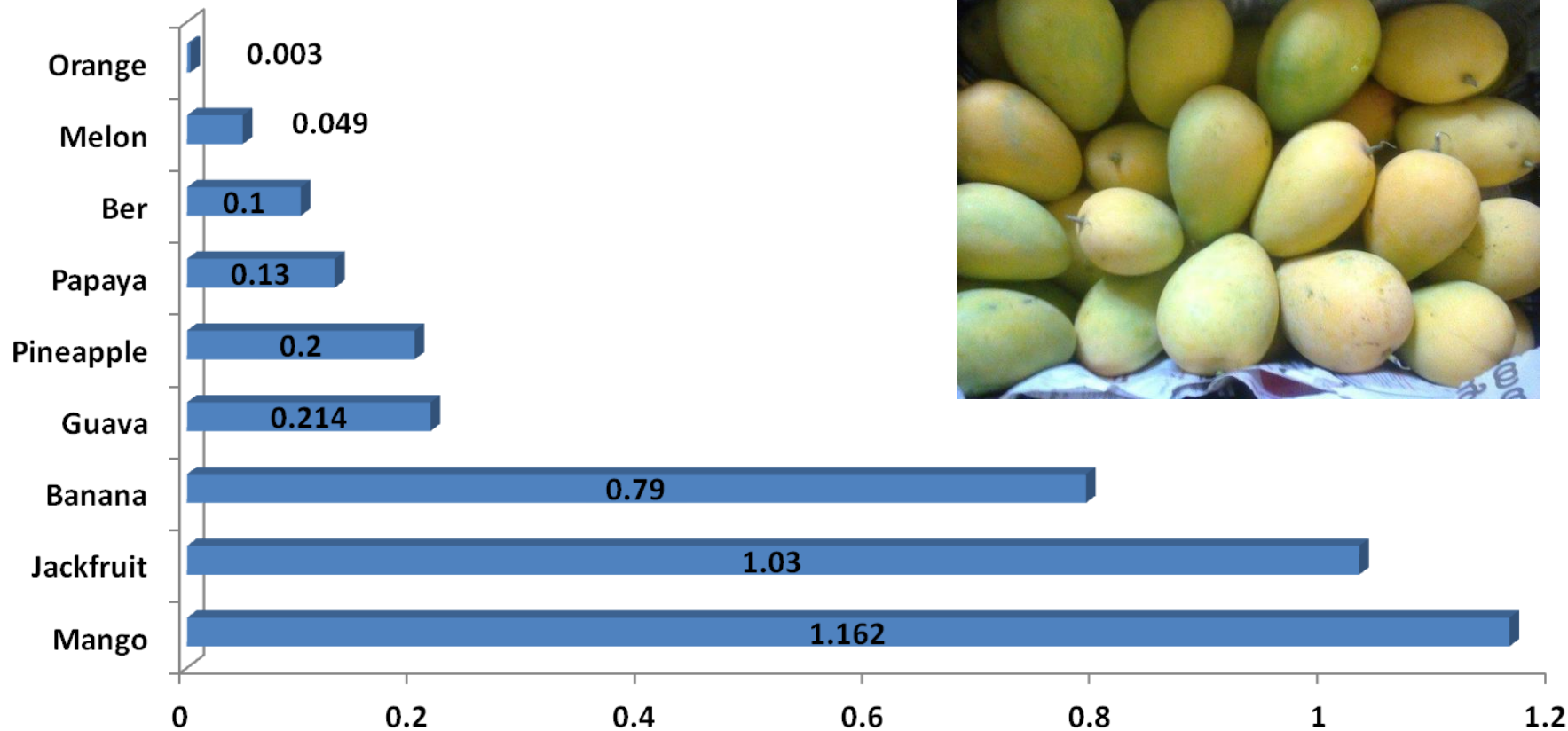




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Since 1938

Production of fruits in Bangladesh, 2015-16

Total Production= 4.80 M. MT





AGRICULTURAL INPUTS

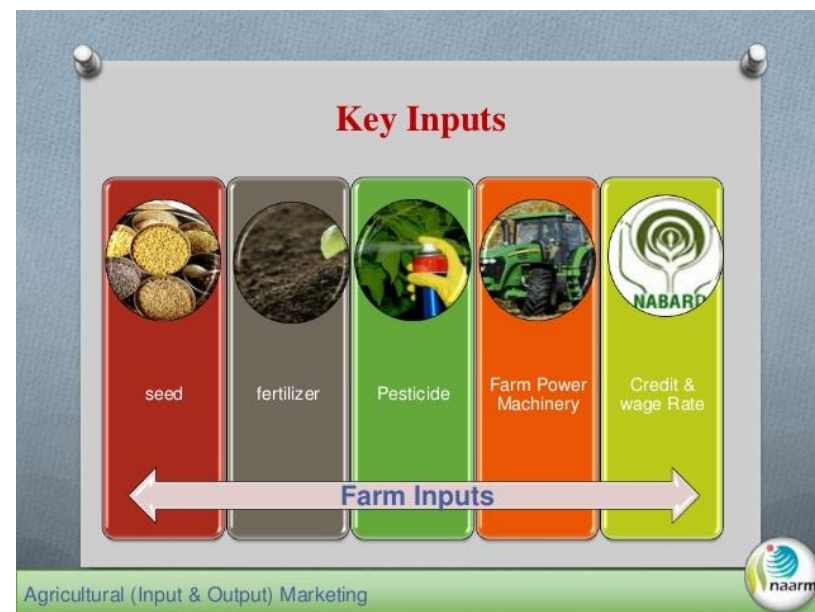
Fertilizer

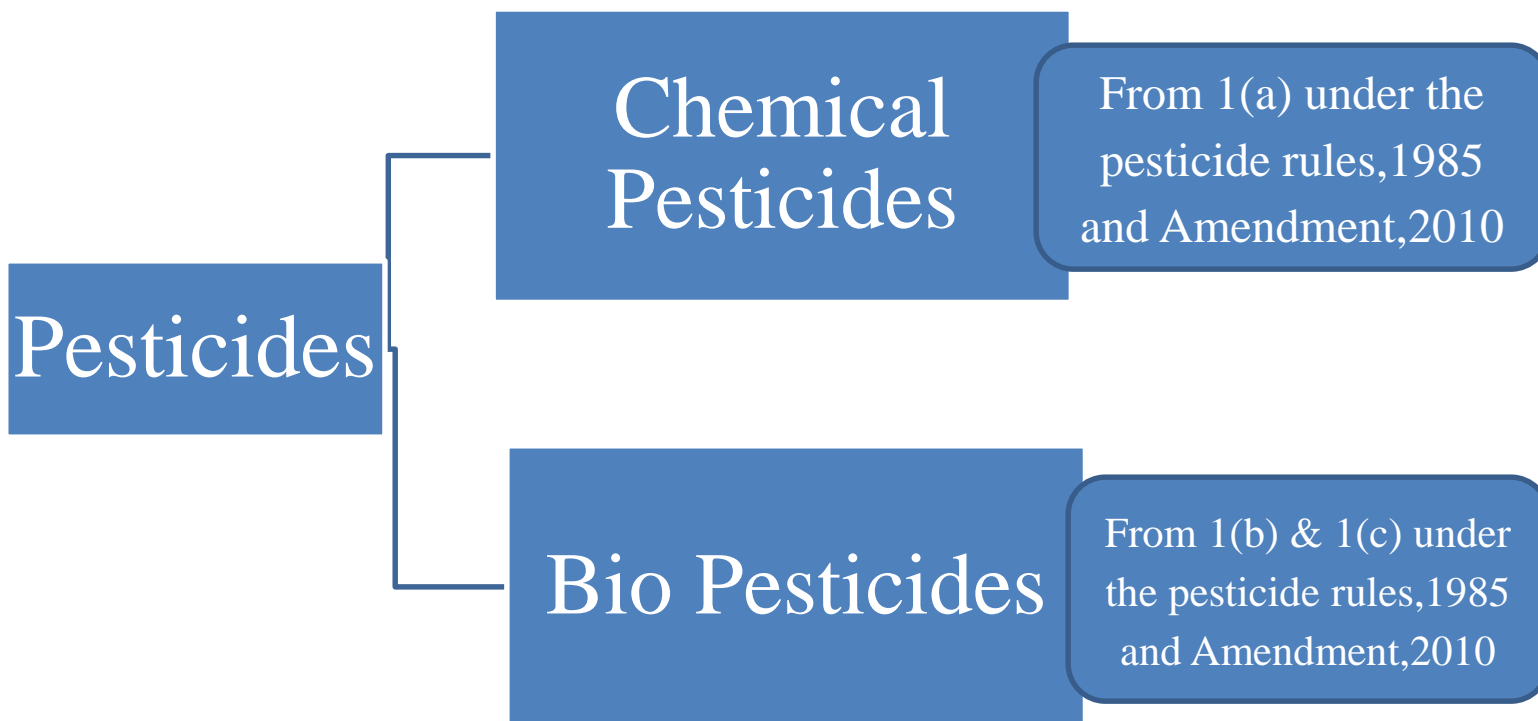
Seed

Pesticides

Labour

Irrigation







Evolution of Bio-pesticides in Bangladesh



2009

Demand for IPM products are farmers end



2010

February

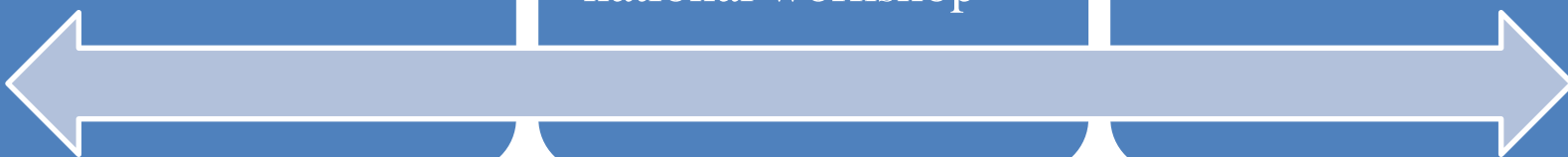
Policy recommendation paper as result of national workshop



2010

May

Amendment of the pesticides act, 1985



Evolution of Bio-pesticides in Bangladesh



2012

Ispahani biotech first licensed for 2 IPM products



2015

Promoting IPM in Bangladesh with 2 companies and 6 products for vegetables



Farmers

more than 56,700 farmers increased their income due to readily available IPM



2017

Mohsin Enterprise first got registration for microbial bio-pesticide (Dicoprime)





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Pheromone Trap



**Controlled insect infestation in Brinjal/Gourds by 80% .
Reduced cost (50-70%) of insecticides application.**





BIO PESTICIDES

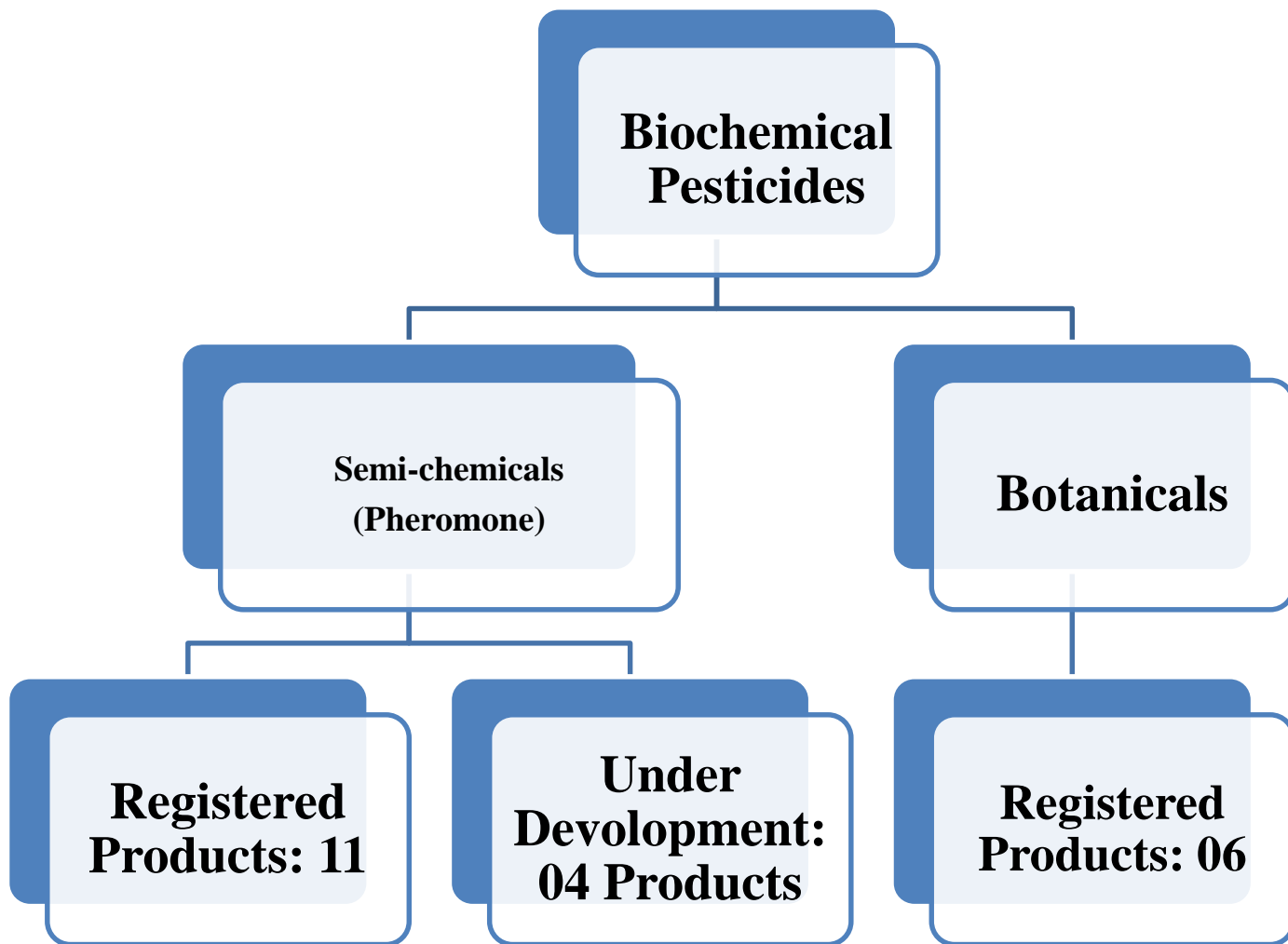
**Biochemical
pesticides**

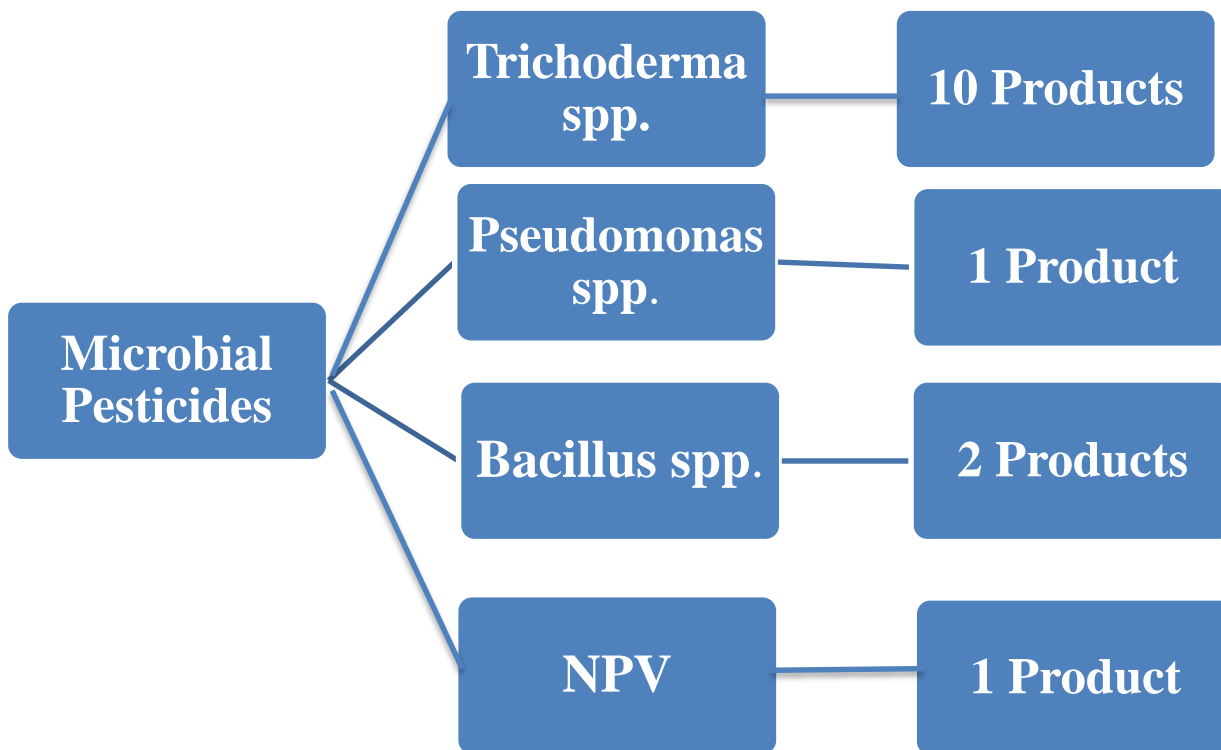
From 1(b) under the pesticide rules,
1985 and its amendment, 2010

Microbial pesticides

From 1(c) under the pesticide rules,
1985 and its amendment, 2010







Registration Status of Bio-pesticides in Bangladesh





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Sher-e-Bangla Agricultural University

Since 1938

Bio-fungicides





Basic Information

➤ In 2018:

- Total pesticide marketing company: 228
- Total registered pesticides: 5500
- Actively present in market (products): 4500
- Registered Bio-pesticides: 30 (10 in under process)
- Pesticides: 90% imported from China, rest from India, Germany and other countries.
- Cancelled pesticides: 196





Use of Pesticides in Bangladesh from 2006-2017 (MT or KL) (Source: PPW, DAE, 2018)

Year	Insecticides			Miticides	Fungicides	Herbicides	Rodenticides	Total
	Granular	Liquid	Powder					
2006	15918.46	3159.13	453.57	60.69	8710.02	3205.40	14.73	31522.00
2007	19963.23	3104.19	519.36	62.11	10227.66	3825.29	10.36	37712.20
2008	25230.58	4190.40	694.20	64.28	14417.78	4024.77	68.18	48690.19
2009	22118.87	4274.89	606.80	55.97	14353.67	3699.85	62.38	45172.43
2010	20967.86	3954.94	571.82	50.71	13269.43	3346.00	79.80	42240.56
2011	20335.12	3574.83	673.50	73.85	15811.93	3895.60	58.50	44423.33
2012	16539.35	3455.46	641.37	318.00	16477.81	3623.94	89.81	41145.74
2013	14787.77	3808.92	760.47	78.69	18808.40	3243.97	119.49	41607.70
2014	12915.20	3949.37	820.42	87.38	17623.69	3769.53	87.63	39253.22
2015	11901.00	3372.00	760.00	79.00	15865.00	3470.00	76.00	35523.00
2016	9795.00	3819.00	1178.00	105.00	16701.00	4050.00	75.00	35723.00
2017	9087.00	4122.00	1268.00	109.00	16800.00	5796.00	76.00	37258.00

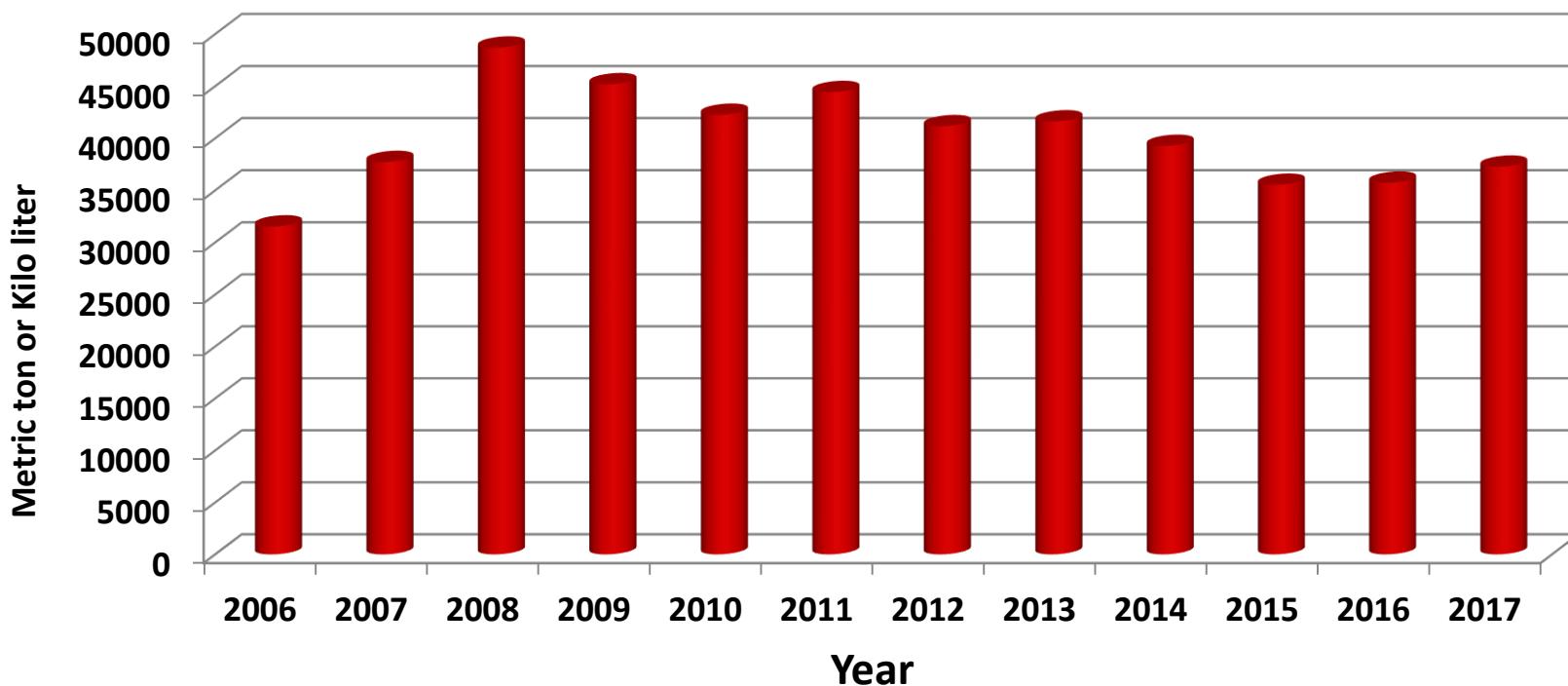




Pesticides use in Bangladesh from 2006-2017 (MT or KL)

(Source: PPW, DAE, 2018)

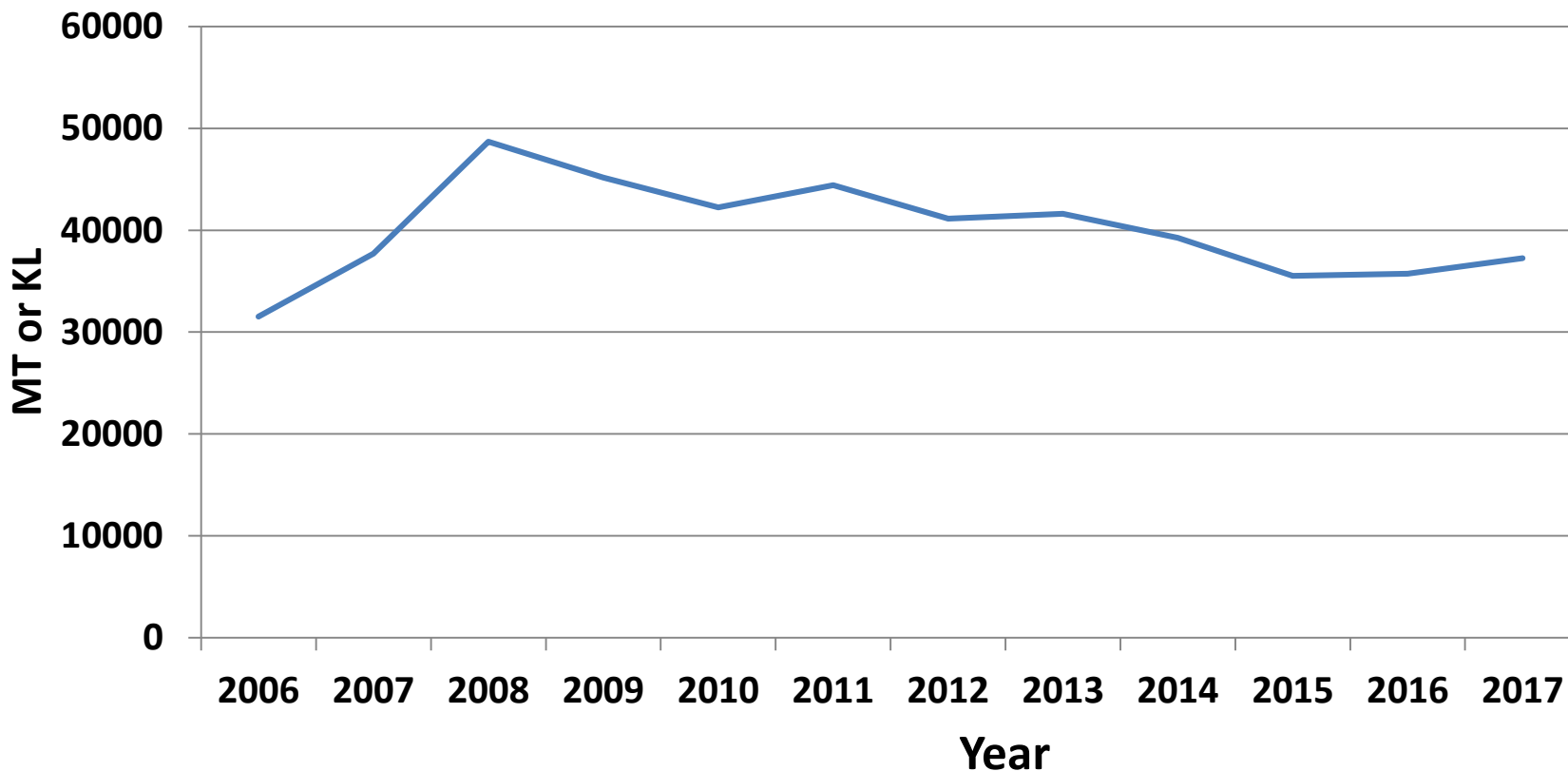
Pesticides





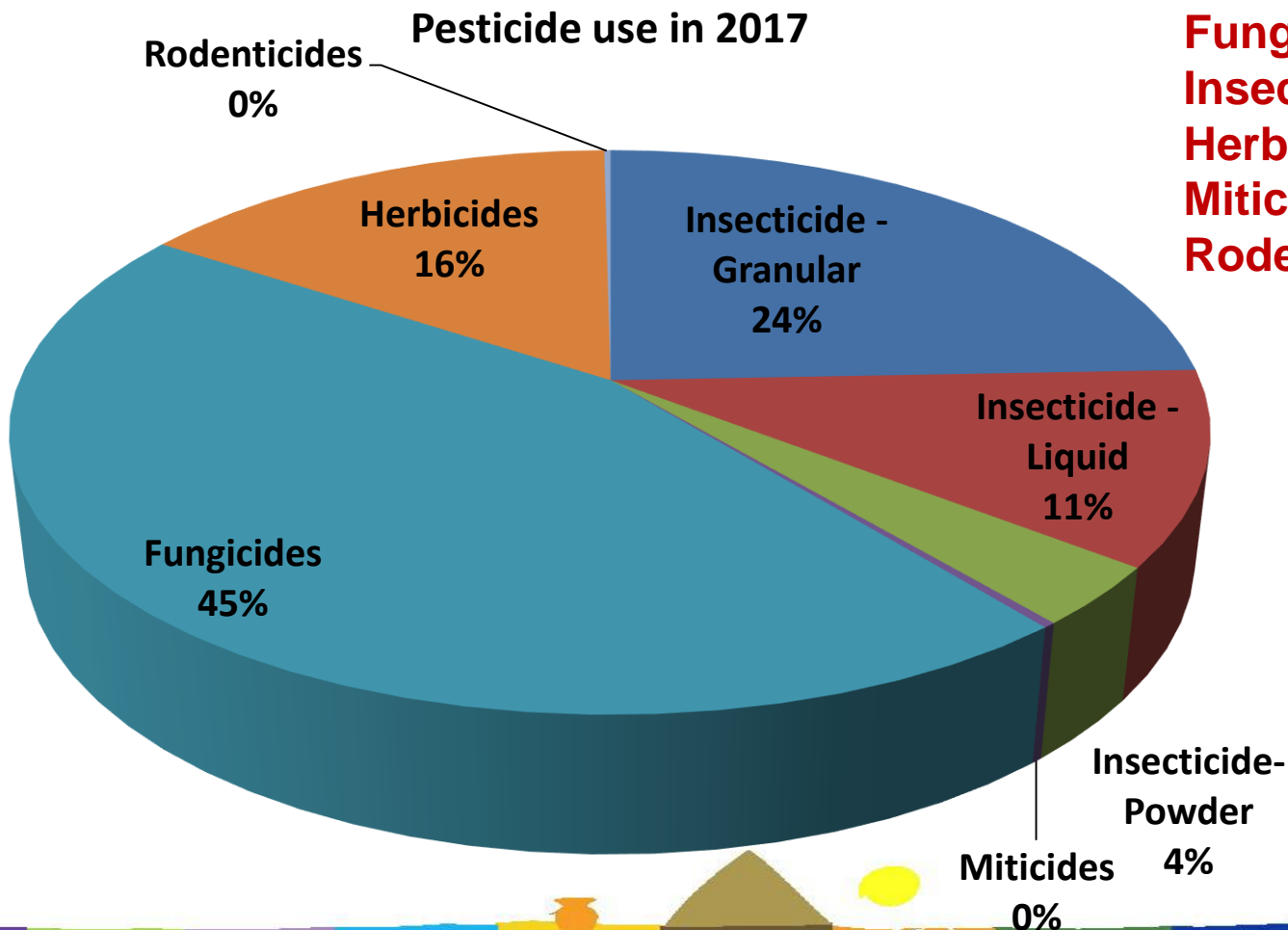
Pesticides use from 2006-2017 (MT or KL)

Pesticides





Pesticides use in 2017 (MT or KL) (Source: PPW, DAE, 2018)

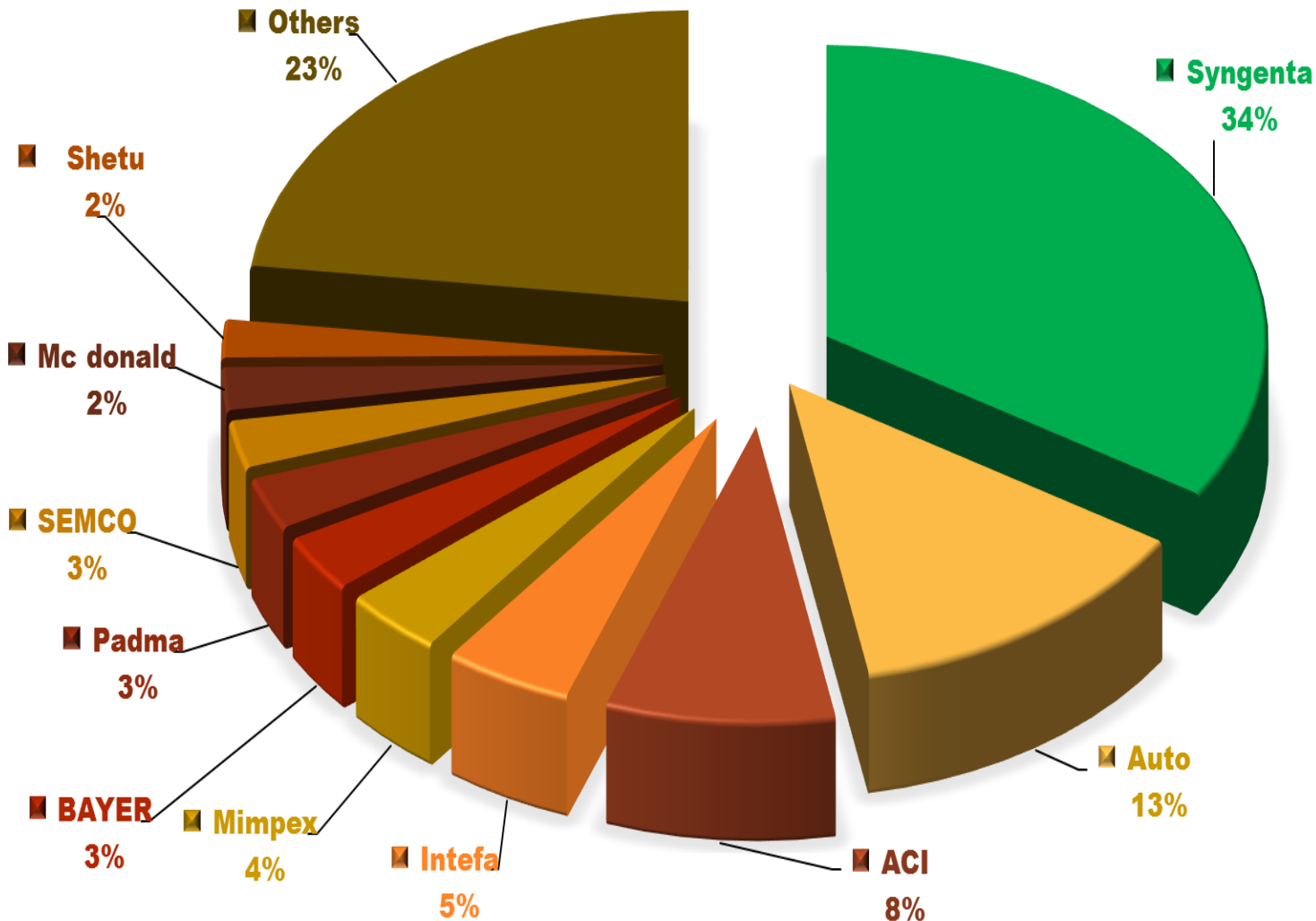


Fungicide: 45.09%
Insecticides: 38.85%
Herbicides: 15.55%
Miticides: 0.29%
Rodenticides: 0.20%



CROP PROTECTION AGRO CHEMICALS (Pesticides) MARKET SIZE - 2015

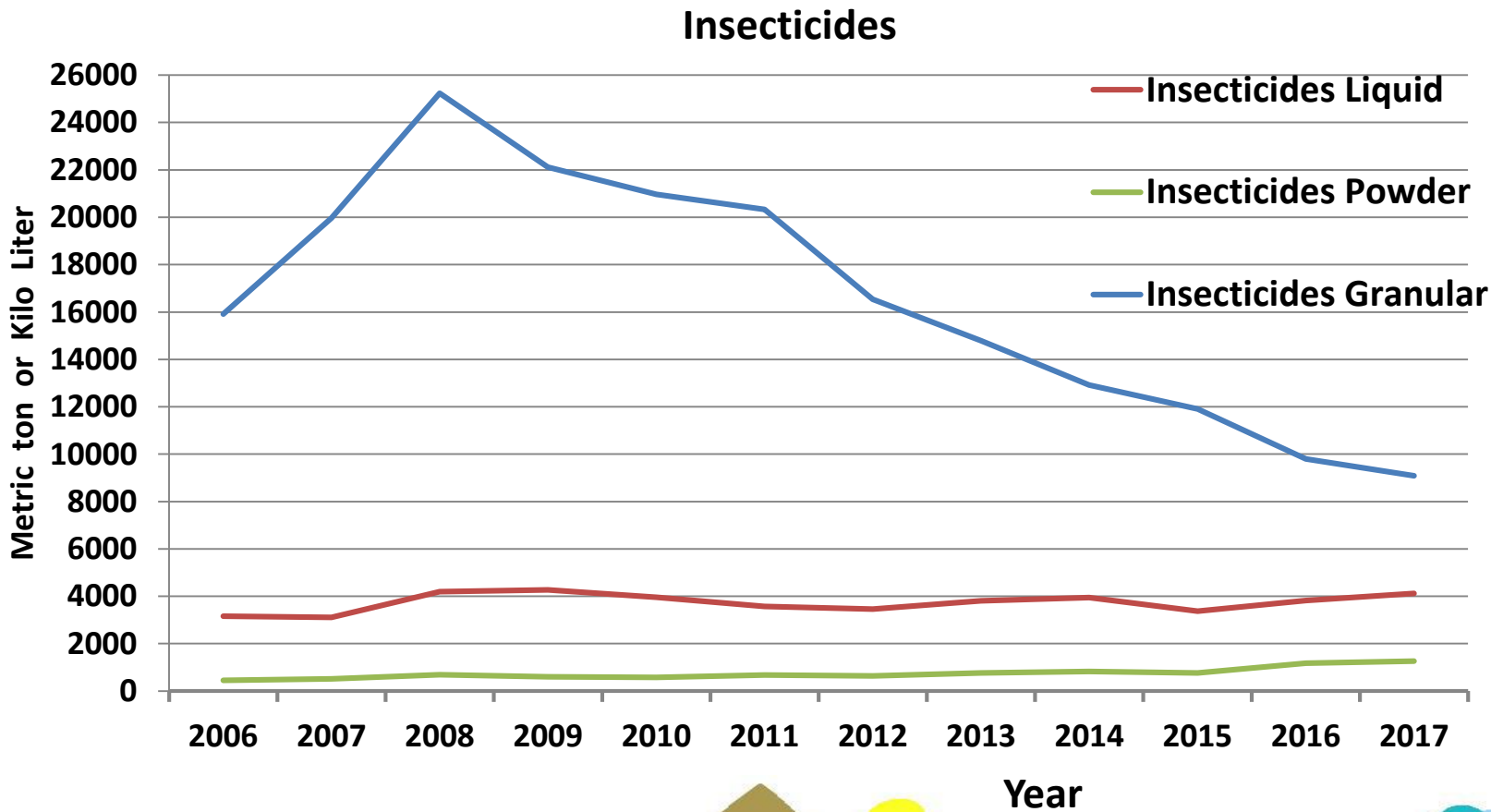
TOTAL MARKET SIZE (**COMPANY WISE**) = 19100 M BDT (224 m USD)





Trend of Insecticides use in Bangladesh from 2006-2017 (MT or KL)

(Source: PPW, DAE, 2018)

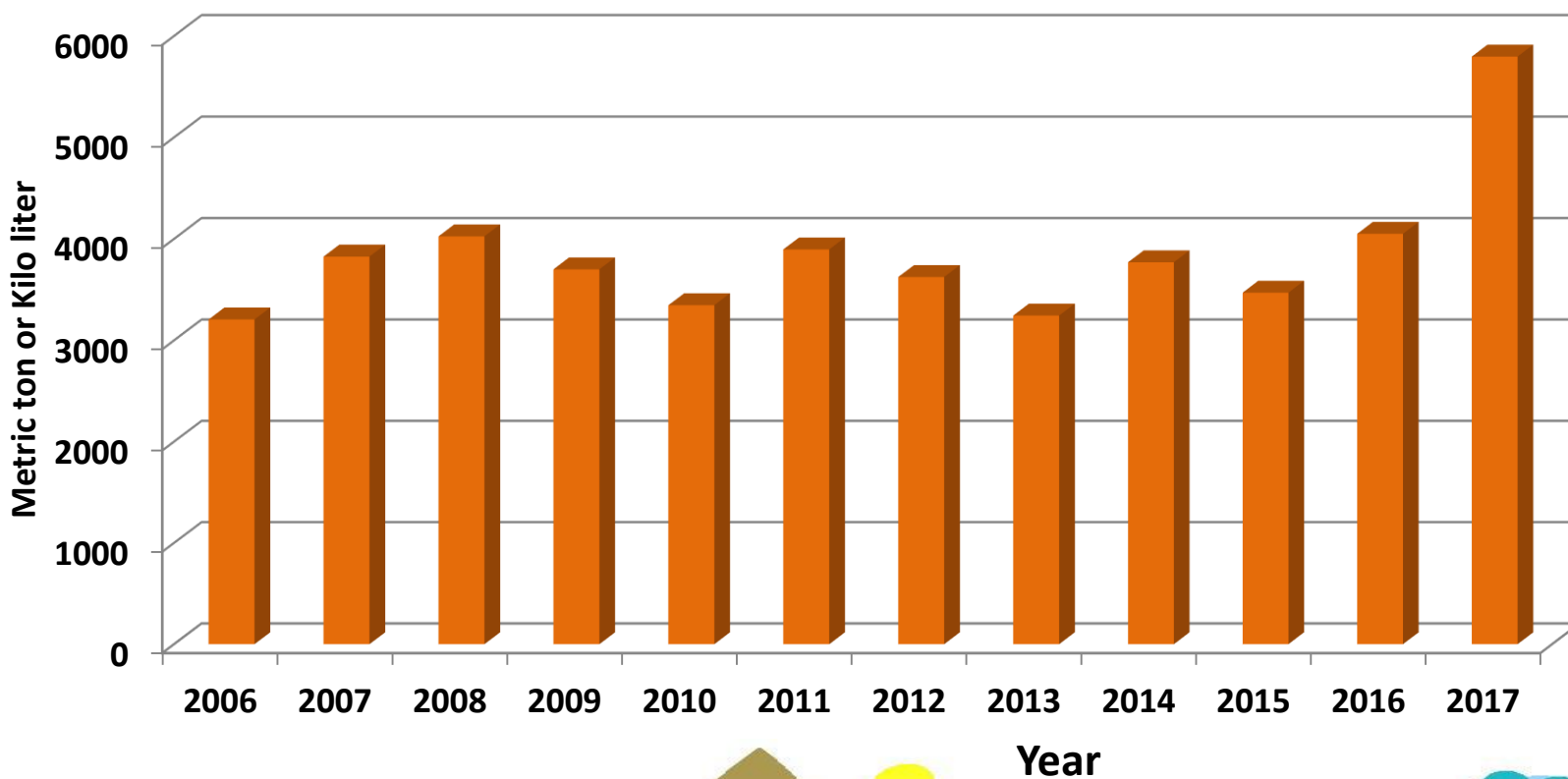




Herbicides use in Bangladesh from 2006-2017 (MT or KL)

(Source: PPW, DAE, 2018)

Herbicides

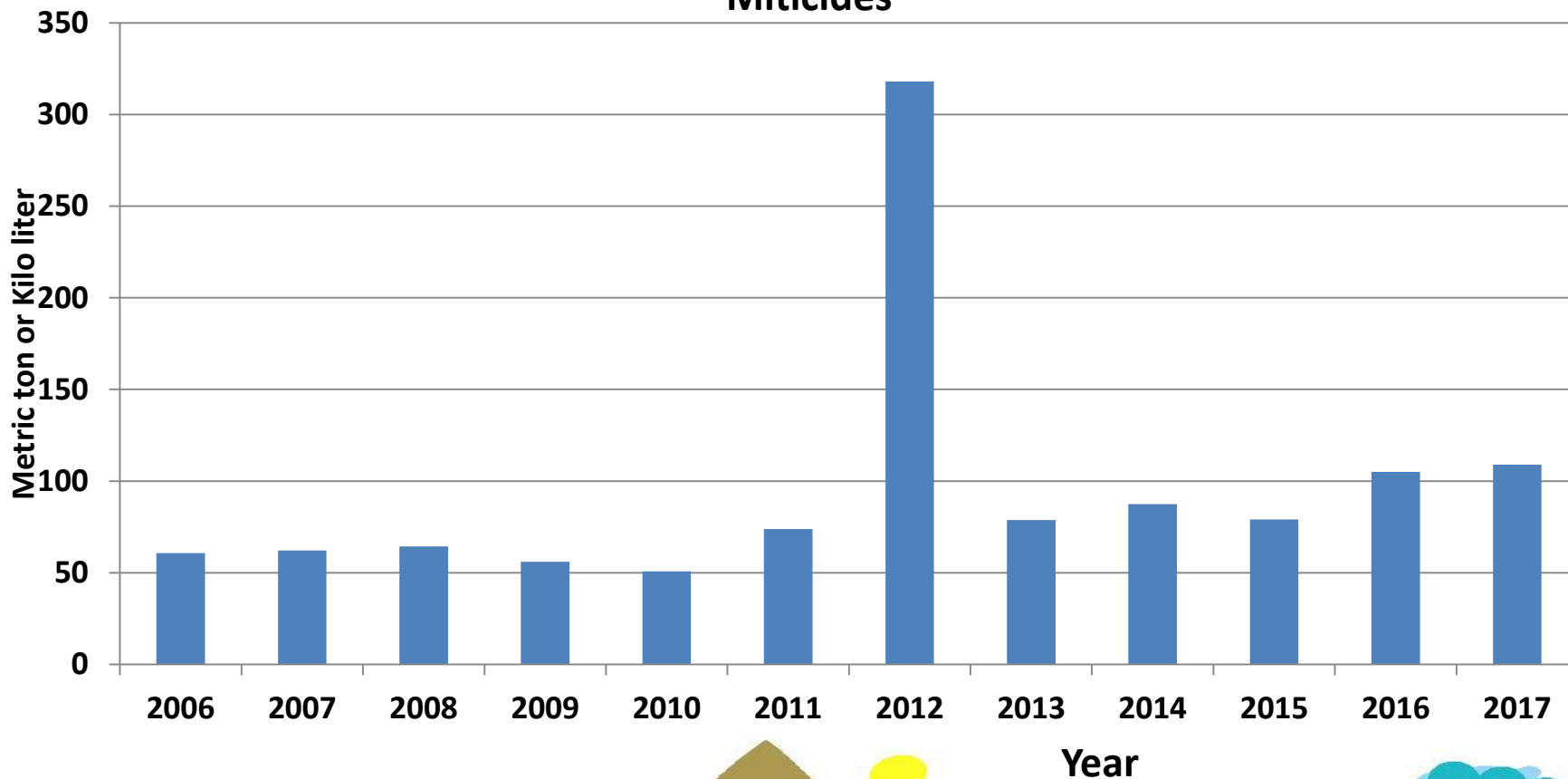




Miticides use in Bangladesh from 2006-2017 (MT or KL)

(Source: PPW, DAE, 2018)

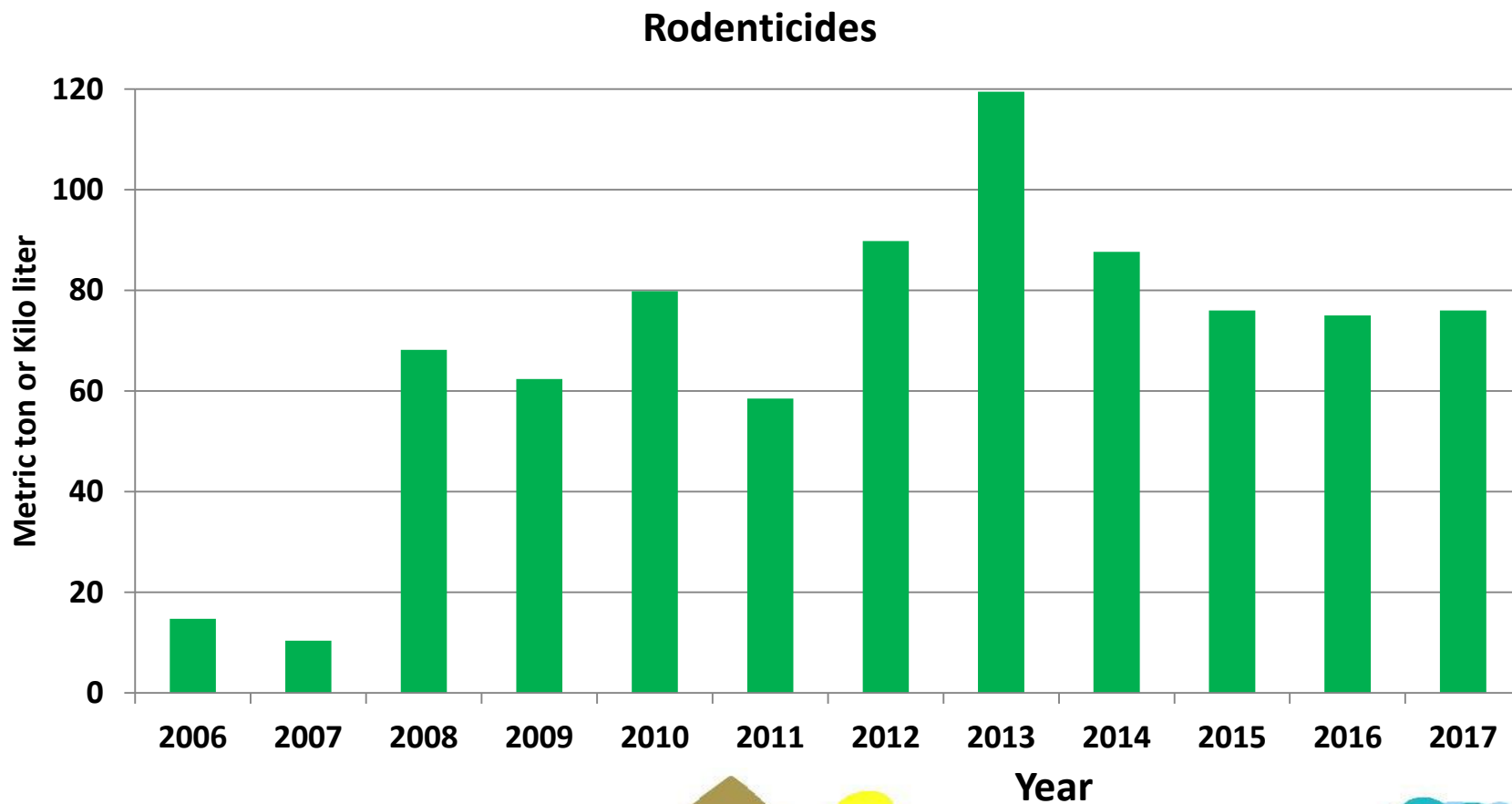
Miticides





Rodenticides use in Bangladesh from 2006-2017 (MT or KL)

(Source: PPW, DAE, 2018)





Difference of use of pesticides from 2008 to 2017

Year	Use of Pesticides (MT or KL)	Price in BDT	Use of Pesticides (in M. BDT)	Use of Pesticides (in M. USD)
2008	48,690.19	$48,690.19 \times 170^* \times 1000$	8277 m BDT	97.38 m USD
2017	37258.00	$37258.00 \times 180^* \times 1000$	6706 m BDT	78.89 m USD
Difference	11432.19	$11432.19 \times 180^* \times 1000$	2058 m BDT	24.21 m USD

* Average price per Kg or L (1 USD= 85 BDT)

- **Bangladesh: Pesticide use drops 25% in last 7 years (Global Plant Protection News, November 2016)**
- **Use of chemical pesticides are gradually decreasing due to IPM practices and promotion against use of chemical pesticides.**
- **It gives a great scope of use of Bio-pesticides in Bangladesh.**
- **Chemical pesticides are considering threat to human health, environment, biodiversity, soil health, water health etc.**





Conclusions

- Agriculture is the determining factor of Bangladesh economy.
- After achieving food security now govt. focus to nutrition security and safe food production.
- Many GO and Non GO projects are ongoing to promote and establish IPM practices in vegetable cultivation.
- Export of vegetables are gradually increasing, that creates demand for Good Agricultural Practices (GAP).
- Bio-pesticide – Very promising for future agriculture.
- National Agricultural Policy 2018 –
Give emphasis on bio-pesticides and Category 3 (WHO)- eco-friendly and safe pesticides.



Thank You All
for your patience
hearing !!

