GLOBAL
PESTICIDES MARKET
2014 - 2019
Growth Trends & Forecasts
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REPORT DESCRIPTION

Pesticides constitute the largest category within the market for crop protection chemicals, with biopesticides accounting for a comparatively minute share. However, growing environmental concerns regarding the use of synthetic pesticides that are primarily produced using petrochemical or inorganic raw materials have resulted in increasing demand for eco-friendly biopesticides. In addition, several highly toxic pesticides have either been phased out or are in the process of being phased out, thereby opening new avenues for growth in demand for biopesticides. For instance, chemicals such as glyphosate (herbicide), atrazine (herbicide) and chlorpyrifos (insecticide), to name a few, remain under constant reviews and can be either gradually phased out or even banned if more eco-friendly options are made available.

Factors driving the markets for pesticides include decreasing arable land, increasing population and the requirement of improving crop yields. On the other hand, regulatory authorities such as EPA (Environment Protection Agency) frequently come up with stringent laws related to curbing pesticide use for alleviating environmental damage and increasing consumer awareness about pesticide consumption, which is expected to be instrumental in slowing down growth in demand for synthetic pesticides.

Biopesticides, on the other hand, are manufactured with renewable resources and are free of synthetic active ingredients. Being organic, free of chemical residues and eco-friendly products, biopesticides have been witnessing faster growth in demand compared to their synthetic counterparts. Governments in several countries have come up with initiatives aimed at promoting the development and use of biopesticides because of their low toxicity, greater safety and higher effectiveness in controlling pests. However, growth in the market has also been hampered due to the entrenched pesticides market, inconsistent efficiency of biopesticides and lack of awareness among consumers about the availability of these products.

Synthetic Pesticides covered in this report are classified into Herbicides, Insecticides, Fungicides and Other Synthetic Pesticides, while categories of Biopesticides include Bioherbicides, Bioinsecticides, Biofungicides and Other Biopesticides. The report also analyzes the global market for Pesticides by application area, including Crop-
Based Applications (Grains & Cereals, Oilseeds and Fruits & Vegetables) and Non-Crop-Based Applications (Turf & Ornamental Grass and Other Applications).


The global volume market for pesticides is projected to reach 3.2 million tons by 2019 from 2.3 million tons in 2013, with a CAGR for volume growth being 6.1% between 2014 and 2020. North America is the largest global market for pesticides, while Asia-Pacific is forecast to be the fastest growing, with a 2014-2020 volume CAGR of 7.9%.

The global value market for pesticides stood at US$51.9 billion in 2013 and is projected to reach US$75.9 billion by 2019, expected to register a CAGR of 6.9% between 2014 and 2020. Despite being the largest market for Pesticides, demand growth in North America is likely to be the slowest, while Asia-Pacific is expected to emerge as the fastest growing market.

Synthetic pesticides dominate the global scenario in terms of volume consumption and value demand, though Biostaticides are slated to register faster growth in both these parameters over the 2014-2020 analysis period.

By application area, crop-based end-uses of pesticides are likely to maintain the fastest growth in terms of volume consumed and value demand during the similar period, and retain the leading raking in terms of largest application area.
TABLE OF CONTENTS

1. Introduction
   1.1 Methodology
   1.2 Definition Of The Market

2. Executive Summary

3. Product Overview
   3.1 Pesticides Defined

   3.2 Role Of Pesticides In Agriculture: Integrated Pest Management (Ipm)

   3.3 Categorization Of Pesticides
      3.3.1 Categorization Of Pesticides Based On Target Pest Species
      3.3.2 Categorization Of Pesticides Based On Chemical Structure
      3.3.3 Categorization Of Pesticides Based On How Or When They Function
      3.3.4 Categorization Of Pesticides Based On Mode Of Action (Site Of Action)

   3.4 Pesticide Formulation Types

   3.5 Categorization Of Pesticides Based On Product Segment
      3.5.1 Herbicides
         3.5.1.1 Classification Of Herbicides
            3.5.1.1.1 By Activity
            3.5.1.1.2 By Use
            3.5.1.1.3 By Mode Of Action
         3.5.1.2 Applications Of Herbicides
         3.5.1.3 Herbicides In Current Use
         3.5.1.4 Health And Environmental Effects Of Herbicides
            3.5.1.4.1 Effects On The Ecology
         3.5.1.5 Herbicide Resistance
      3.5.2 Insecticides
         3.5.2.1 Categorization Of Insecticides
         3.5.2.2 Principal Classes Of Insecticides
         3.5.2.3 Environmental Effects Of Insecticides
            3.5.2.3.1 Effects On Non-Target Species
            3.5.2.3.2 Dichlorodiphenyltrichloroethane (Ddt)
            3.5.2.3.3 Cause Of Decreasing Pollinators
      3.5.3 Fungicides
         3.5.3.1 Natural Fungicides
      3.5.3.2 Fungicide Resistance

   3.5.4 Other Pesticides
      3.5.4.1 Nematicides
      3.5.4.2 Molluscicides

   3.6 Biopesticides
      3.6.1 Categories Of Biopesticides
         3.6.1.1 Microbial Pesticides
         3.6.1.2 Plant Pesticides
         3.6.1.3 Biochemical Pesticides
3.6.2 Benefits Of Biopesticides In Comparison To Synthetic Pesticides
3.6.3 Some Disadvantages Of Biopesticides
3.6.4 Promoting The Development And Use Of Biopesticides By The EPA
3.6.5 Bioherbicides
3.6.6 Bioinsecticides
3.6.7 Biofungicides

4. Market Forces
   4.1 Emerging Trends In The Pesticides Industry
      4.1.1 Demand For Food Safety And Quality Growing
      4.1.2 Biopesticides Gaining Market Share
      4.1.3 Research And Development Costs Burgeoning
      4.1.4 Developing Regions Witnessing Faster Demand
      4.1.5 Genetically Modified (Gm) Crops Being Adopted On A Large Scale Leading To Reduced Pesticide Use
      4.1.6 Claims Of Reduction In Pesticide Use By Ge Crops Falsified In The Us (Scenario In 2012)

5. Regulatory Environment
   5.1 Regulations For Pesticides In The United States
      5.1.1 Regulations For Generic Producers
         5.1.1.1 Me-Too Registrations
   5.2 Regulations For Pesticides In The European Union (EU)
      5.2.1 EU Rules
         5.2.1.1 EU Policy
      5.2.2 Sustainable Use Of Pesticides
         5.2.2.1 Major Actions For The Sustainable Use Of Pesticides
      5.2.3 Approval Of Active Substances
         5.2.3.1 Procedure
      5.2.4 Maximum Residue Levels
         5.2.4.1 EU Rules On MRLs
         5.2.4.2 Setting Of EU MRLs

6. Market Segmentation (Volume in ’000 Tons & Value in $Million)
   6.1 Synthetic Pesticides
      6.1.1 Synthetic Herbicides
      6.1.2 Synthetic Insecticides
      6.1.3 Synthetic Fungicides
      6.1.4 Other Synthetic Pesticides
   6.2 Biopesticides
      6.2.1 Bioherbicides
      6.2.2 Bioinsecticides
      6.2.3 Biofungicides
      6.2.4 Other Biopesticides
   6.3 By Application Area (Volume in ’000 Tons & Value in $Million)
      6.3.1 Crop-Based Applications
         6.3.1.1 Grains & Cereals
         6.3.1.2 Oilseeds
         6.3.1.3 Fruits & Vegetables
      6.3.2 Non-Crop-Based Applications
         6.3.2.1 Turf & Ornamental Grass
         6.3.2.2 Other Non-Crop-Based Applications
7. Regional Market Analysis (Volume in '000 Tons & Value in $Million)

7.1 North America
   7.1.1 United States
   7.1.2 Canada

7.2 Europe
   7.2.1 Germany
   7.2.2 France
   7.2.3 United Kingdom
   7.2.4 Italy
   7.2.5 Spain
   7.2.6 Rest Of Europe

7.3 Asia-Pacific
   7.3.1 Australia
   7.3.2 China
   7.3.3 India
   7.3.4 Japan
   7.3.5 South Korea
   7.3.6 Rest Of Asia-Pacific

7.4 Latin America
   7.4.1 Argentina
   7.4.2 Brazil
   7.4.3 Rest Of Latin America

7.5 Rest Of World

8. Competitive Overview
   8.1 Market Share Analysis
   8.2 Strategies Adopted By Leading Players
      8.2.1 Syngenta
      8.2.2 Bayer CropScience
      8.2.3 Monsanto
      8.2.4 BASF
      8.2.5 Dow Agrosciences LLC
      8.2.6 DuPont

9. Profiles Of Major Companies
   9.1 Adama Agricultural Solutions Ltd (Formerly Makhteshim Agan Industries Ltd) (Israel)
   9.2 American Vanguard Corporation (United States)
   9.2.1 AMVAC Chemical Corporation (United States)
   9.3 Arysta LifeScience (Japan)
   9.4 BASF SE (Germany)
   9.5 Bayer CropScience (Germany)
   9.6 BioWorks Inc. (United States)
   9.7 Cheminova A/S (Denmark)
   9.8 Chemtura AgroSolutions (United States)
   9.9 Dow AgroSciences LLC (United States)
   9.10 DuPont (United States)
   9.11 FMC Corporation (United States)
   9.12 Isagro S.p.A. (Italy)
   9.13 Ishihara Sangyo Kaisha Ltd (Japan)
   9.14 Marrone Bio Innovations (United States)
   9.15 Monsanto Company (United States)
   9.16 Natural Industries (United States)
   9.17 Nufarm Ltd (Australia)
   9.18 Syngenta AG (Switzerland)
9.19 Valent BioSciences Corporation (United States)

10. Patents Scenario
   10.1 The United States
   10.2 US, EP And WTO Applications

11. Appendix
   11.1 Secondary Sources

12. Disclaimers
LIST OF TABLES

Table 1: Registered Bioherbicides And Their Status As of 2012
Table 2: List of Biofungicides (Biologicals) Used To Control Selected Vegetable Crop Diseases
Table 3: Global Pesticides Market Volume by Product Group/Segment For 2010-2020 (In ’000 Tons)
Table 4: Global Synthetic Pesticides Market Volume by Region For 2010-2020 (In ’000 Tons)
Table 5: Global Synthetic Herbicides Market Volume by Region For 2010-2020 (In ’000 Tons)
Table 6: Global Synthetic Insecticides Market Volume by Region For 2010-2020 (In ’000 Tons)
Table 7: Global Synthetic Fungicides Market Volume by Region For 2010-2020 (In ’000 Tons)
Table 8: Global Other Synthetic Pesticides Market Volume by Region For 2010-2020 (In ’000 Tons)
Table 9: Global Biopesticides Market Volume by Region For 2010-2020 (In ’000 Tons)
Table 10: Global Bioherbicides Market Volume by Region For 2010-2020 (In ’000 Tons)
Table 11: Global Bioinsecticides Market Volume by Region For 2010-2020 (In ’000 Tons)
Table 12: Global Biofungicides Market Volume by Region For 2010-2020 (In ’000 Tons)
Table 13: Global Other Biopesticides Market Volume by Region For 2010-2020 (In ’000 Tons)
Table 14: Global Pesticides Market Volume by Application Area For 2010-2020 (In ’000 Tons)
Table 15: Global Pesticides Market Volume by Region In Crop-Based Applications For 2010-2020 (In ’000 Tons)
Table 16: Global Pesticides Market Volume by Region In Grains & Cereals For 2010-2020 (In ’000 Tons)
Table 17: Global Pesticides Market Volume by Region In Oilseeds For 2010-2020 (In ’000 Tons)
Table 18: Global Pesticides Market Volume by Region In Fruits & Vegetables For 2010-2020 (In ’000 Tons)
Table 19: Global Pesticides Market Volume by Region In Non-Crop-Based Applications For 2010-2020 (In ’000 Tons)
Table 20: Global Pesticides Market Volume by Region In Turf & Ornamental Grass For 2010-2020 (In ’000 Tons)
Table 21: Global Pesticides Market Volume by Region In Other Non-Crop-Based Applications For 2010-2020 (In ’000 Tons)
Table 22: Global Pesticides Market Value by Product Group/Segment For 2010-2020 (In US$ Million)
Table 23: Global Synthetic Pesticides Market Value by Region For 2010-2020 (In US$ Million)
Table 24: Global Synthetic Herbicides Market Value by Region For 2010-2020 (In US$ Million)
Table 25: Global Synthetic Insecticides Market Value by Region For 2010-2020 (In US$ Million)
Table 26: Global Synthetic Fungicides Market Value by Region For 2010-2020 (In US$ Million)
Table 27: Global Other Synthetic Pesticides Market Value by Region For 2010-2020 (In US$ Million)
Table 28: Global Biopesticides Market Value by Region For 2010-2020 (In US$ Million)
Table 29: Global Bioherbicides Market Value by Region For 2010-2020 (In US$ Million)
Table 30: Global Bioinsecticides Market Value by Region For 2010-2020 (In US$ Million)
Table 31: Global Biofungicides Market Value by Region For 2010-2020 (In US$ Million)
Table 32: Global Other Biopesticides Market Value by Region For 2010-2020 (In US$ Million)
Table 33: Global Pesticides Market Value by Application Area For 2010-2020 (In US$ Million)
Table 34: Global Pesticides Market Value by Region In Crop-Based Applications For 2010-2020 (In US$ Million)
Table 35: Global Pesticides Market Value by Region In Grains & Cereals For 2010-2020 (In US$ Million)
Table 36: Global Pesticides Market Value by Region In Oilseeds For 2010-2020 (In US$ Million)
Table 37: Global Pesticides Market Value by Region In Fruits & Vegetables For 2010-2020 (In US$ Million)
Table 38: Global Pesticides Market Value by Region In Non-Crop-Based Applications For 2010-2020 (In US$ Million)
Table 39: Global Pesticides Market Value by Region In Turf & Ornamental Grass For 2010-2020 (In US$ Million)
Table 40: Global Pesticides Market Value by Region In Other Non-Crop-Based Applications For 2010-2020 (In US$ Million)
Table 41: North American Pesticides Market Volume by Region For 2010-2020 (In ’000 Tons)
Table 42: North American Pesticides Market Volume by Product Group/Segment For 2010-2020 (In ’000 Tons)
Table 43: North American Pesticides Market Volume by Application Area For 2010-2020 (In ’000 Tons)
Table 44: North American Pesticides Market Value by Region For 2010-2020 (In US$ Million)
Table 45: North American Pesticides Market Value by Product Group/Segment For 2010-2020 (In US$ Million)
Table 46: North American Pesticides Market Value by Application Area For 2010-2020 (In US$ Million)
Table 47: United States Pesticides Market Volume by Product Group/Segment For 2010-2020 (In '000 Tons)
Table 48: United States Pesticides Market Volume by Application Area For 2010-2020 (In '000 Tons)
Table 49: United States Pesticides Market Value by Product Group/Segment For 2010-2020 (In US$ Million)
Table 50: United States Pesticides Market Value by Application Area For 2010-2020 (In US$ Million)
Table 51: Canadian Pesticides Market Volume by Product Group/Segment For 2010-2020 (In '000 Tons)
Table 52: Canadian Pesticides Market Volume by Application Area For 2010-2020 (In '000 Tons)
Table 53: Canadian Pesticides Market Value by Product Group/Segment For 2010-2020 (In US$ Million)
Table 54: Canadian Pesticides Market Value by Application Area For 2010-2020 (In US$ Million)
Table 55: European Pesticides Market Volume by Region For 2010-2020 (In '000 Tons)
Table 56: European Pesticides Market Volume by Product Group/Segment For 2010-2020 (In '000 Tons)
Table 57: European Pesticides Market Volume by Application Area For 2010-2020 (In '000 Tons)
Table 58: European Pesticides Market Value by Region For 2010-2020 (In US$ Million)
Table 59: European Pesticides Market Value by Product Group/Segment For 2010-2020 (In US$ Million)
Table 60: European Pesticides Market Value by Application Area For 2010-2020 (In US$ Million)
Table 61: German Pesticides Market Volume by Product Group/Segment For 2010-2020 (In '000 Tons)
Table 62: German Pesticides Market Volume by Application Area For 2010-2020 (In '000 Tons)
Table 63: German Pesticides Market Value by Product Group/Segment For 2010-2020 (In US$ Million)
Table 64: German Pesticides Market Value by Application Area For 2010-2020 (In US$ Million)
Table 66: French Pesticides Market Volume by Product Group/Segment For 2010-2020 (In '000 Tons)
Table 67: French Pesticides Market Volume by Product Group/Segment For 2010-2020 (In US$ Million)
Table 68: French Pesticides Market Volume by Application Area For 2010-2020 (In US$ Million)
Table 69: United Kingdom Pesticides Market Volume by Product Group/Segment For 2010-2020 (In '000 Tons)
Table 70: United Kingdom Pesticides Market Volume by Application Area For 2010-2020 (In '000 Tons)
Table 71: United Kingdom Pesticides Market Value by Product Group/Segment For 2010-2020 (In US$ Million)
Table 72: United Kingdom Pesticides Market Value by Application Area For 2010-2020 (In US$ Million)
Table 73: Italian Pesticides Market Volume by Product Group/Segment For 2010-2020 (In '000 Tons)
Table 74: Italian Pesticides Market Volume by Application Area For 2010-2020 (In '000 Tons)
Table 75: Italian Pesticides Market Value by Product Group/Segment For 2010-2020 (In US$ Million)
Table 76: Italian Pesticides Market Value by Application Area For 2010-2020 (In US$ Million)
Table 77: Spanish Pesticides Market Volume by Product Group/Segment For 2010-2020 (In '000 Tons)
Table 78: Spanish Pesticides Market Volume by Application Area For 2010-2020 (In '000 Tons)
Table 79: Spanish Pesticides Market Value by Product Group/Segment For 2010-2020 (In US$ Million)
Table 80: Spanish Pesticides Market Value by Application Area For 2010-2020 (In US$ Million)
Table 81: Rest of Europe Pesticides Market Volume by Product Group/Segment For 2010-2020 (In '000 Tons)
Table 82: Rest of Europe Pesticides Market Volume by Application Area For 2010-2020 (In '000 Tons)
Table 83: Rest of Europe Pesticides Market Value by Product Group/Segment For 2010-2020 (In US$ Million)
Table 84: Rest of Europe Pesticides Market Value by Application Area For 2010-2020 (In US$ Million)
Table 85: Asia-Pacific Pesticides Market Volume by Region For 2010-2020 (In '000 Tons)
Table 86: Asia-Pacific Pesticides Market Volume by Product Group/Segment For 2010-2020 (In '000 Tons)
Table 87: Asia-Pacific Pesticides Market Volume by Application Area For 2010-2020 (In '000 Tons)
Table 88: Asia-Pacific Pesticides Market Value by Region For 2010-2020 (In US$ Million)
Table 89: Asia-Pacific Pesticides Market Value by Product Group/Segment For 2010-2020 (In US$ Million)
Table 90: Asia-Pacific Pesticides Market Value by Application Area For 2010-2020 (In US$ Million)
Table 91: Australian Pesticides Market Volume by Product Group/Segment For 2010-2020 (In '000 Tons)
Table 92: Australian Pesticides Market Volume by Application Area For 2010-2020 (In '000 Tons)
Table 93: Australian Pesticides Market Value by Product Group/Segment For 2010-2020 (In US$ Million)
Table 94: Australian Pesticides Market Value by Application Area For 2010-2020 (In US$ Million)
Table 95: Chinese Pesticides Market Volume by Product Group/Segment For 2010-2020 (In '000 Tons)
Table 96: Chinese Pesticides Market Volume by Application Area For 2010-2020 (In '000 Tons)
Table 97: Chinese Pesticides Market Value by Product Group/Segment For 2010-2020 (In US$ Million)
Table 98: Chinese Pesticides Market Value by Application Area For 2010-2020 (In US$ Million)
Table 99: Indian Pesticides Market Volume by Product Group/Segment For 2010-2020 (In '000 Tons)
Table 100: Indian Pesticides Market Volume by Application Area For 2010-2020 (In '000 Tons)
Table 101: Indian Pesticides Market Value by Product Group/Segment For 2010-2020 (In US$ Million)
Table 102: Indian Pesticides Market Value by Application Area For 2010-2020 (In US$ Million)
Table 103: Japanese Pesticides Market Volume by Product Group/Segment For 2010-2020 (In '000 Tons)
Table 104: Japanese Pesticides Market Volume by Application Area For 2010-2020 (In '000 Tons)
Table 105: Japanese Pesticides Market Value by Product Group/Segment For 2010-2020 (In US$ Million)
Table 106: Japanese Pesticides Market Value by Application Area For 2010-2020 (In US$ Million)
Table 107: South Korean Pesticides Market Volume by Product Group/Segment For 2010-2020 (In '000 Tons)
Table 108: South Korean Pesticides Market Volume by Application Area For 2010-2020 (In '000 Tons)
Table 109: South Korean Pesticides Market Value by Product Group/Segment For 2010-2020 (In US$ Million)
Table 110: South Korean Pesticides Market Value by Application Area For 2010-2020 (In US$ Million)
Table 111: Rest of Asia-Pacific Pesticides Market Volume by Product Group/Segment For 2010-2020 (In '000 Tons)
Table 112: Rest of Asia-Pacific Pesticides Market Volume by Application Area For 2010-2020 (In '000 Tons)
Table 113: Rest of Asia-Pacific Pesticides Market Value by Product Group/Segment For 2010-2020 (In US$ Million)
Table 114: Rest of Asia-Pacific Pesticides Market Value by Application Area For 2010-2020 (In US$ Million)
Table 115: Latin America Pesticides Market Volume by Region For 2010-2020 (In '000 Tons)
Table 116: Latin America Pesticides Market Volume by Product Group/Segment For 2010-2020 (In '000 Tons)
Table 117: Latin America Pesticides Market Volume by Application Area For 2010-2020 (In '000 Tons)
Table 118: Latin America Pesticides Market Value by Region For 2010-2020 (In US$ Million)
Table 119: Latin America Pesticides Market Value by Product Group/Segment For 2010-2020 (In US$ Million)
Table 120: Latin America Pesticides Market Value by Application Area For 2010-2020 (In US$ Million)
Table 121: Argentina Pesticides Market Volume by Product Group/Segment For 2010-2020 (In '000 Tons)
Table 122: Argentina Pesticides Market Volume by Application Area For 2010-2020 (In '000 Tons)
Table 123: Argentina Pesticides Market Value by Product Group/Segment For 2010-2020 (In US$ Million)
Table 124: Argentina Pesticides Market Value by Application Area For 2010-2020 (In US$ Million)
Table 125: Brazil Pesticides Market Volume by Product Group/Segment For 2010-2020 (In '000 Tons)
Table 126: Brazil Pesticides Market Volume by Application Area For 2010-2020 (In '000 Tons)
Table 127: Brazil Pesticides Market Value by Product Group/Segment For 2010-2020 (In US$ Million)
Table 128: Brazil Pesticides Market Value by Application Area For 2010-2020 (In US$ Million)
Table 129: Rest of Latin America Pesticides Market Volume by Product Group/Segment For 2010-2020 (In '000 Tons)
Table 130: Rest of Latin America Pesticides Market Volume by Application Area For 2010-2020 (In '000 Tons)
Table 131: Rest of Latin America Pesticides Market Value by Product Group/Segment For 2010-2020 (In US$ Million)
Table 132: Rest of Latin America Pesticides Market Value by Application Area For 2010-2020 (In US$ Million)
Table 133: Rest of The World Pesticides Market Volume by Product Group/Segment For 2010-2020 (In '000 Tons)
Table 134: Rest of World Pesticides Market Volume by Application Area For 2010-2020 (In '000 Tons)
Table 135: Rest of World Pesticides Market Value by Product Group/Segment For 2010-2020 (In US$ Million)
Table 136: Rest of World Pesticides Market Value by Application Area For 2010-2020 (In US$ Million)
Table 137: Leading Ten Pesticide Companies In Terms of Market Share For 2013
Table 138: Innovation Product Pipeline For Dow Agrosciences
Table 139: First Quarter 2014 Vs. First Quarter 2013 Sales For BASF by Region (In € Million)
Table 140: First Quarter 2014 Vs. First Quarter 2013 Sales For BASF by Business Segment (In € Million)
Table 141: Fiscal 2013 Vs. Fiscal 2012 Sales For BASF by Region (In € Million)
Table 142: Fiscal 2013 Vs. Fiscal 2012 Sales For BASF by Business Segment (In € Million)
Table 143: Fiscal 2013 Sales of Crop Protection Products by Region (In € Million)
Table 144: Fiscal 2013 Sales of Crop Protection Products by Segment (In € Million)
Table 145: Fiscal 2013 Vs. Fiscal 2012 Sales For Bayer CropScience by Region (In € Million)
Table 146: Fiscal 2013 Vs. Fiscal 2012 Sales For Bayer CropScience by Operating Segment (In € Million)
Table 147: Fiscal 2013 Vs. Fiscal 2012 Sales For Bayer CropScience by Business Unit (In € Million)
Table 148: First Quarter 2014 Vs. First Quarter 2013 Sales For Cheminova A/S by Product Group (In DKK Million)
Table 149: First Quarter 2014 Vs. First Quarter 2013 Sales For Cheminova A/S by Region (In DKK Million)
Table 150: Fiscal 2013 Vs. Fiscal 2012 Sales For Cheminova A/S by Product Group (In DKK Million)
Table 151: Fiscal 2013 Vs. Fiscal 2012 Sales For Cheminova A/S by Region (In DKK Million)
Table 152: Fiscal 2013 Vs. Fiscal 2012 Sales of FMC Agricultural Solutions (In US$ Million)
Table 153: Fiscal 2012 Vs. Fiscal 2011 Sales For Isagro SpA by Region (In € Million)
Table 154: Fiscal 2013 Vs. Fiscal 2012 Sales For Ishihara Sango Kaisha Ltd by Region (In ¥ Million)
Table 155: Fiscal 2013 Vs. Fiscal 2012 Sales For Ishihara Sango Kaisha Ltd by Business Segment (In ¥ Million)
Table 156: Fiscal 2013 Vs. Fiscal 2012 Sales For Monsanto by Operating Segment (In US$ Million)
Table 157: Fiscal 2013 Vs. Fiscal 2012 Sales For Monsanto by Region (In US$ Million)
Table 158: First Half 2014 Vs. First Half 2013 Sales For Nufarm Ltd by Segment (In A$ Million)
Table 159: Fiscal 2013 Vs. Fiscal 2012 Sales For Nufarm Ltd by Segment (In A$ Million)
Table 160: Fiscal 2013 Vs. Fiscal 2012 Sales For Syngenta by Segment (In US$ Million)
Table 161: Fiscal 2013 Vs. Fiscal 2012 Sales For Syngenta by Product Line (In US$ Million)
**GLOBAL PESTICIDES MARKET**

- The global value market for Pesticides, estimated to be US$54.9 billion in 2014, is expected to register a CAGR of 6.9% between 2014 and 2020 to reach a projected US$81.9 billion by 2020.

- Demand for Synthetic Pesticides dominates the worldwide market for Pesticides, with an estimated 2014 share of 90.2%. However, the value market for Biopesticides is anticipated to post a faster CAGR of 16.8% during the forecast period.

### Global Pesticides Market Value by Product Group/Segment for 2010-2020 (In US$ Million)

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<tr>
<td><strong>Total</strong></td>
<td>**</td>
<td>**</td>
<td>**</td>
<td>51,926.39</td>
<td>**</td>
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<td>6.89</td>
</tr>
</tbody>
</table>
### Global Synthetic Pesticides Market Value by Region for 2010-2020 (In US$ Million)

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<tbody>
<tr>
<td>North America</td>
<td>**</td>
<td>**</td>
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<td>23,191.64</td>
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<tr>
<td>Europe</td>
<td>12,429.37</td>
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<tr>
<td>Asia-Pacific</td>
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<td>9,714.58</td>
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<tr>
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<tr>
<td>Rest of World</td>
<td>**</td>
<td>**</td>
<td>**</td>
<td>**</td>
<td>**</td>
<td>1,750.23</td>
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<tr>
<td><strong>Total</strong></td>
<td>**</td>
<td>**</td>
<td>45,006.69</td>
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<td>**</td>
<td>5.49</td>
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</table>
Global value demand for Biopesticides is poised to post a strong CAGR of 16.8% between 2014 and 2020 to reach a projected US$13.6 billion by 2020 from an estimated US$5.4 billion in 2014.

Asia-Pacific is slated to witness the fastest growth in demand for Biopesticides, while North America, despite being the largest region, would sustain the slowest CAGR during the 2014-2020 period.

Since Biopesticides are products derived from natural and biological sources in contrast to mineral oil sources, their use has been found to be beneficial for humans, as well as the environment, with the other major benefit offered including their quick biodegradation.

Global Biopesticides Market Value by Region for 2010-2020 (In US$ Million)

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<td>1,845.43</td>
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<td>1,188.40</td>
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<td>Asia-Pacific</td>
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<td>2,982.87</td>
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<tr>
<td>Rest of World</td>
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<td>**</td>
<td>168.47</td>
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<td>Total</td>
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<td>**</td>
<td>5,360.01</td>
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<td>16.82</td>
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TURF & ORNAMENTAL GRASS

- Turf & Ornamental Grass applications of Pesticides are estimated to be worth US$7.1 billion in 2014 and projected to reach US$10.1 billion by 2020 to reflect a 2014-2020 CAGR if 6.2%.
- Europe is expected to sustain the slowest growth in demand for Pesticides in Turf & Ornamental Grass applications, while Asia-Pacific would record the fastest CAGR of 7.6%.

Global Pesticides Market Value by Region in Turf & Ornamental Grass for 2010-2020 (In US$ Million)

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<td>North America</td>
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<td>5.48</td>
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<tr>
<td>Asia-Pacific</td>
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<td>1,362.64</td>
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<tr>
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<td>6,407.32</td>
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<td>**</td>
<td>10,141.27</td>
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</tr>
</tbody>
</table>
REGULATORY ENVIRONMENT

Regulations for Generic Producers

Me-Too Registrations

An exclusive right for ten years is granted by the FIFRA in relation to the data submitted by proprietary companies for registering their new products, implying that data under the exclusive period can be cited by other companies, i.e., generic producers, only after they are permitted to do so. This ten-year period can be extended up to 13 years, following which the FIFRA mandates that the applicant tenders an offer of compensation to the proprietary company for me-too registrations. The data can also be cited without compensation, provided it has been submitted more than 15 years back.

There have to exist substantial similarities in composition and use of the proposed product and the existing product or they should be different in ways such that adverse impacts on the environment do not increase considerably.

Me-too applications are reviewed by the EPA within shorter durations, with the length of time being based on the method of data citation, with six months being the period for the cite-all method and 12 months for the selective method. The me-too applicants have to offer compensation to applicable data owners, which include task forces from the industry.

The major benefit of registering an active ingredient for generic producers is that they get to establish a foothold in the market, in addition to gaining autonomy. In normal circumstances, the generic company would only have to the right of manufacturing for the registrant company, with little scope of getting to directly market the product in the US.
COMPETITIVE OVERVIEW

Leading Ten Pesticide Companies in Terms of Market Share for 2013

Collaborative strategies among the top players in the pesticides industry have been aimed at acquiring greater market presence, even while making optimum use of available resources. Since the global pesticides industry is led by select players, collaborations with other smaller and regional companies helps in expanding their footprint. These deals also help in exchanging vital data related to development of innovative products and solutions, which can be achieved through joint R&D initiatives. Licensing and distribution agreements are also quite common in this industry.

The global pesticides industry has been subject to stringent restrictions and controls imposed by several regional and international bodies, since the use of these products for agriculture advancement has an in-built correlation with sustaining an ever burgeoning population. The hitherto utilized chemical variants implicated in human, animal and environmental health damage have been giving way to biologically sound alternatives, as has been exemplified by the slew of alternatives now on offer. This has been possible as a consequence of partnerships and collaborations among the significant players, as well as between these majors and regional entities. Despite
advancements in biological alternatives, the chemical pesticides industry has been firmly entrenched, which can be established from the range of collaborations being engaged in by companies across the globe.

Another collaborative strategy employed by companies includes either acquiring specific product lines or obtaining distribution and/or development licenses for the same from regional manufacturers. This is a symbiotic relationship in which both parties are benefitted. For instance, in June 2014, Mitsui Chemicals Agro granted a development and license agreement to BASF for a new insecticide, dubbed MCI-8007, for commercializing the same globally, with the exception of Japan and other specific countries. This deal helps BASF in expanding its offerings, with the potential of jointly developing unique formulations for specific markets in the future. Another case in point is the exclusive distribution agreement between Stockton and TQC for distributing the former’s proprietary biofungicide, Timorex Gold®, in Peru. This product has been approved by the Peruvian authorities for controlling Botrytis cinerea in strawberries, powdery mildew in pepper and vines and Black sigatoka in banana. As a result, Stockton, which had gained access to the Mexican market with a previous agreement with TQC, now establishes a foothold in Peru, a vital market in Latin America. More recently, Beijing Yoloo formed an alliance with Bayer CropScience to include the former’s nitenpyramid/pymetrozine 80% WDG insecticide into the latter’s portfolio for global distribution under the Jirui trade name. This unique product, already having gained approval from Chinese farmers as substantiated from its US$16 million sales in 2013, becomes the first Chinese offering from Bayer CropScience.

Some of the other significant collaborations in the pesticides industry over the recent past include the following:

- Expansion of an agreement between AgraQuest and Bayer CropScience for home and garden fungicides beyond the US to France, Italy, and Germany
- Collaboration between AgraQuest and DuPont for the development and distribution of a new biopesticide DPX RNP31 based on AgraQuest’s patented microbial active ingredient, Bacillus pumilus QST 2808
- Appointment of Certis Europe BV by American Vanguard Corp as the principal European distributor for its soil nematicide/insecticide Mocap (ethoprophos)
- Agreement between Arysta LifeScience and Cheminova A/S for distribution of the latter’s products
- BASF granting exclusive distribution rights and use of the trademark Sovran fungicide to Cheminova
• Collaborative agreement between BASF and Monsanto for developing dicamba-tolerant cropping systems by the granting of reciprocal licenses, with BASF agreeing to supply its formulated dicamba herbicide products to Monsanto

• Bayer licensing its proprietary herbicide tolerance technology, LibertyLink®, to DuPont business Pioneer Hi-Bred for use in canola (Brassica napus) hybrids, with Pioneer, in turn, providing Bayer with access to specific proprietary juncea (Brassica juncea) genetics

• Bayer CropScience and Koppert Biological Systems entering into an agreement for the grant of exclusive worldwide rights on the marketing, registration and production of the new product Shemer, a biological fungicidal product based on the yeast strain Metschnikowia fructicola

• Development and marketing license agreement between Dow AgroSciences and Gowan, enabling the latter to license the novel active fungicide meptyldinocap

• Exclusive development and distribution agreement between FMC’s Agricultural Products Group and Marrone Bio Innovations for distributing the latter’s Regalia® Maxx biofungicide in Latin America

• Syngenta Crop Protection AG’s major distribution agreement with Marrone Bio Innovations for the exclusive distribution of the latter’s Regalia® Maxx biofungicide in specialty crop markets throughout Europe, Africa and the Middle East

\textit{Bayer CropScience}

Research has always been an intrinsic component in the operational strategy of Bayer CropScience, prompting the company to maintain a superior position in its field of activities. R&D activities in the area of agriculture, be it for developing a breakthrough crop protection product or a variety of seed, are quite laborious. Moreover, these activities are time consuming taking up to ten years or more for one blockbuster product to be ready. Nonetheless, Bayer has been at the forefront to develop and launch innovative products and solutions by attending key priorities such as increasing crop yield, improving traits and modifying products.

More often than not diseases can quickly begin immune to treatments, implying that it becomes imperative to search for and discover new substances. Bayer has achieved considerable success in overcoming this shortcoming by turning to nature and channelizing it’s processes as exemplified by Movento™, a groundbreaking insecticide that makes use of sap for distributing the active substance throughout the plant. Other leading
products that have left the laboratories of Bayer include Alion™, a long-lasting herbicide for controlling weeds in perennial crops (such as citrus fruits, nuts, grapes, pome fruits, stone fruits) and Luna™, a fungicide capable of controlling several fungal diseases and preventing the process of rotting during storage. In addition, Bayer has been active in seeking out pest management solutions based on biological active ingredients which can play a vital role in sustainable agriculture. These efforts have led to the development of the Voltivo™ product range for seed treatment and Natria™, a product line offering a full range of non-synthetic choices for homeowners and gardeners alike that effectively protect the home, lawn and garden against listed pests, weeds and diseases.

Recently, Bayer invested a sum of €18 million for expanding its Wismar-based facility in order to address the ever growing demand for biological crop protection products. The company is also focused on the African continent as a potential growth area by offering smallholder farmers access to innovation and knowledge. Some practices include providing seeds, latest crop protection solutions, training in good agricultural practices like environmental protection and product stewardship programs.
ABOUT US

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