Crop Protection Market in Canada

Sino-Canada Crop Protection Seminar (2020)

Shuyou Han, PhD

Hanson AgroSciences Co. Ltd.
Email: hanshuyou@gmail.com
Cell: +1 519 702 2185
Web: www.hansonagrochemical.com
Twitter:@ShuyouHan

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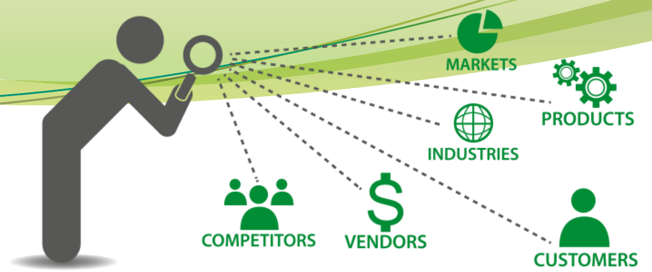
About Me

- **Director** at Hanson AgroSciences Co. Ltd. (www.hansonagrochemical.com, Twitter: @ShuyouHan)
- **Co-owner** at AgriTrade Inc.
- **Correspondent/Freelancer** at Crop Science/Agrow at IHS Markit.
- **Working Experiences**: dedicated more than 20 years to sales and marketing at Ciba-Geigy/Novartis/Syngenta, Uniroyal/Chemtura/Arysta LifeScience.
- **Education Background**:
    - PhD. in Plant Biotech (University of Ottawa)
    - Master in Plant Biotech (Carleton University)
    - Master in Entomology (Fujian Agricultural U)
    - Bachelor in Crop Protection(Huazhong Agricultural U)

Brief Intro to Hanson AgroSciences Co., Ltd



- The business scope of Hanson AgroSciences is involved in

1. Pesticide product registration at PMRA and USEPA

2. Pesticide promotion, distribution, and sales in North America

3. Pesticide market surveys in USA, Canada, China, and other key Asian countries

4. Pesticide industry news, plant biotech patent watch, track on new active ingredients

5. Talks on crop protection market trend in the international conferences (Canada, China, the USA, Mexico etc.)

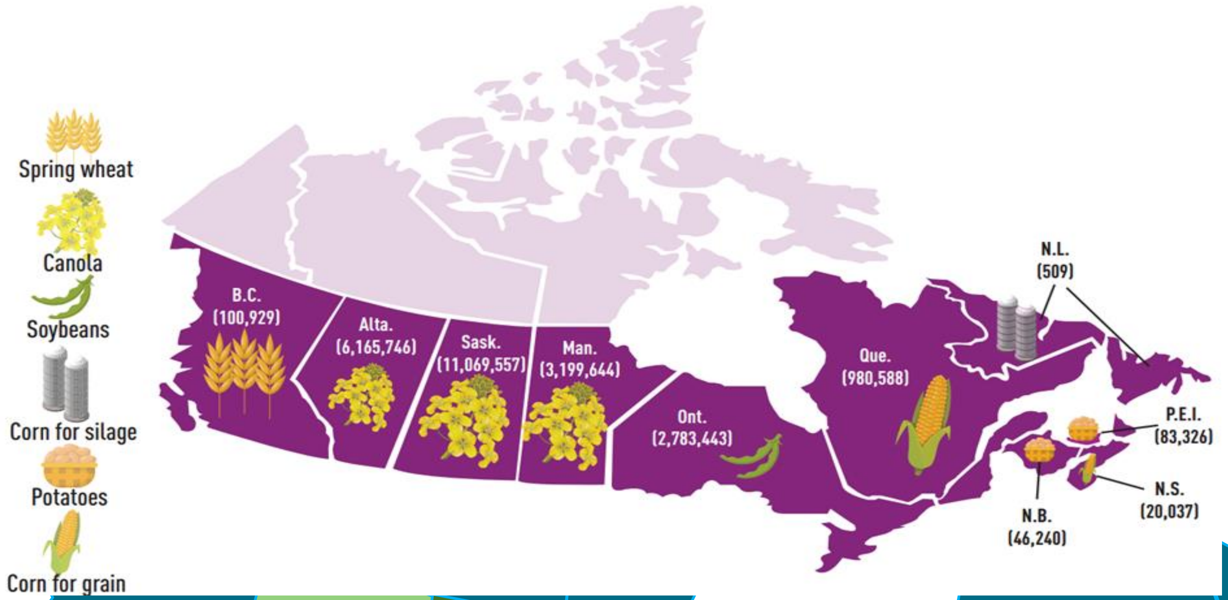
Canada is the 7th Largest Agricultural Country

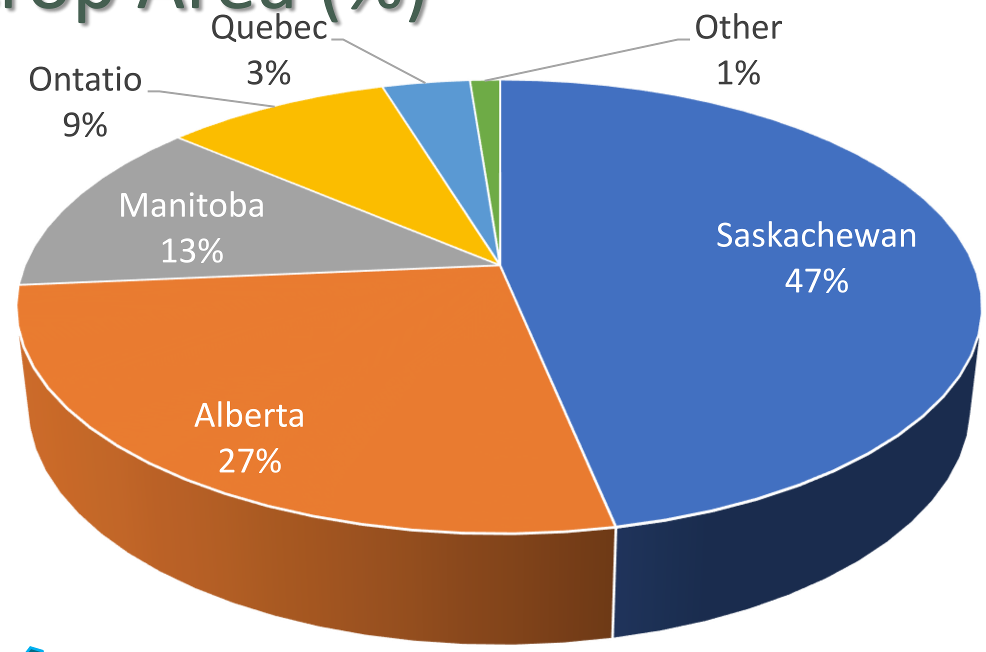
Countries With The Most Arable Land (square kilometers, 2020)

Rank	Country	Land km^2	% Of World	Land 1000 x ha	Land (100 million mu 亿亩）
1	United States	1,650,062	10.48%	165,006.20	24.8
2	India	1,451,810	9.22%	145,181.00	21.8
3	China	1,385,905	8.80%	138,590.50	20.8
4	Russia	1,174,284	7.46%	117,428.40	17.6
5	Brazil	586,036	3.72%	58,603.60	8.8
6	Australia	468,503	2.97%	46,850.30	7
7	Canada	415,573	2.64%	41,557.30	6.2
8	Ukraine	324,791	2.06%	32,479.10	4.9
9	Nigeria	300,736	1.91%	30,073.60	4.5
10	Argentina	274,490	1.74%	27,449.00	4.1

https://beef2live.com/story-countries-arable-land-world-0-108929

Provincial Distribution of Total Field Crop Area (%)





Statcan, 2020

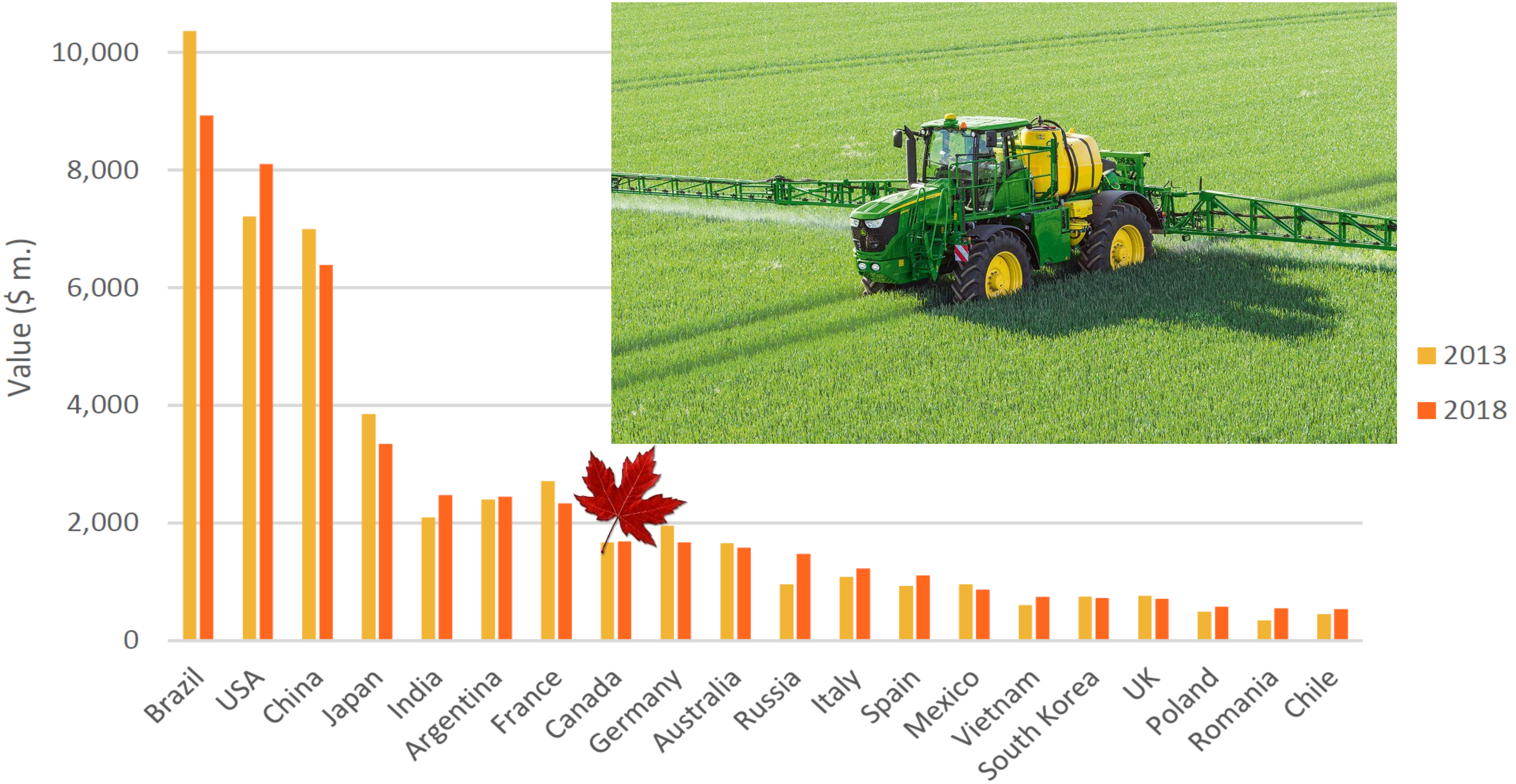
https://www150.statcan.gc.ca/n1/pub/95-640-x/2016001/article/14807-eng.htm

Seeded Area (1,000 ha) of Principal Field Crops in Canada (2017-2018)

http://www.agr.gc.ca/resources/prod/doc/misb/mag-gam/fco-ppc/fco-ppc_2018-06-21-eng.pdf

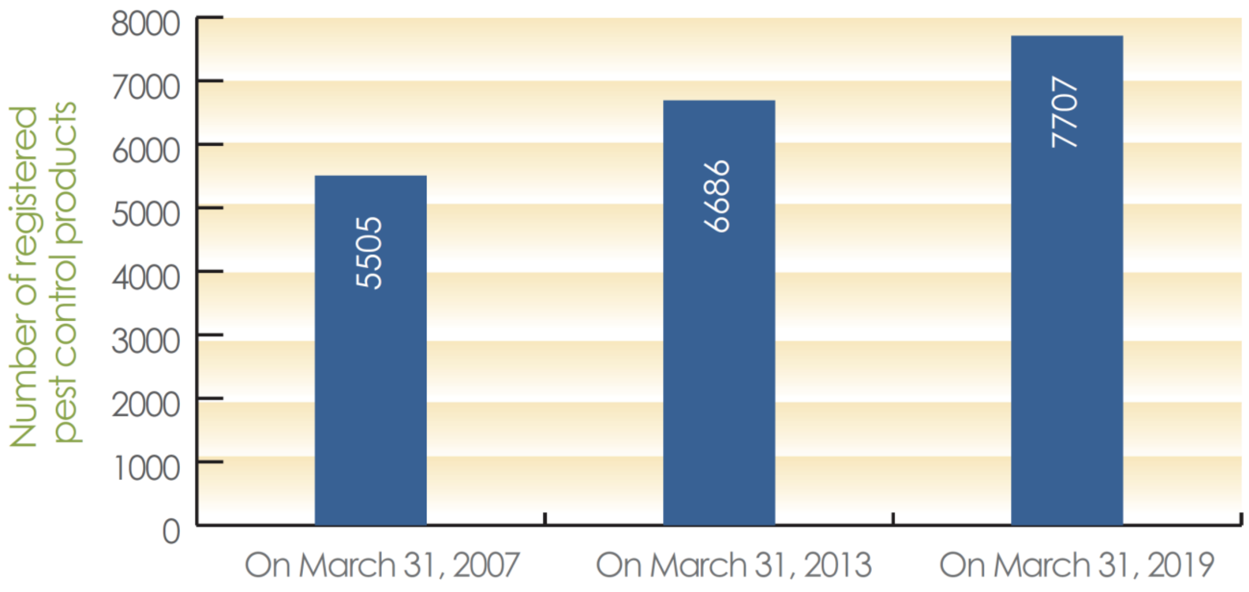
Crop Protection Country Market Value 2018 / 2013

--- Canada is the 8th Largest Crop Protection Market Globally

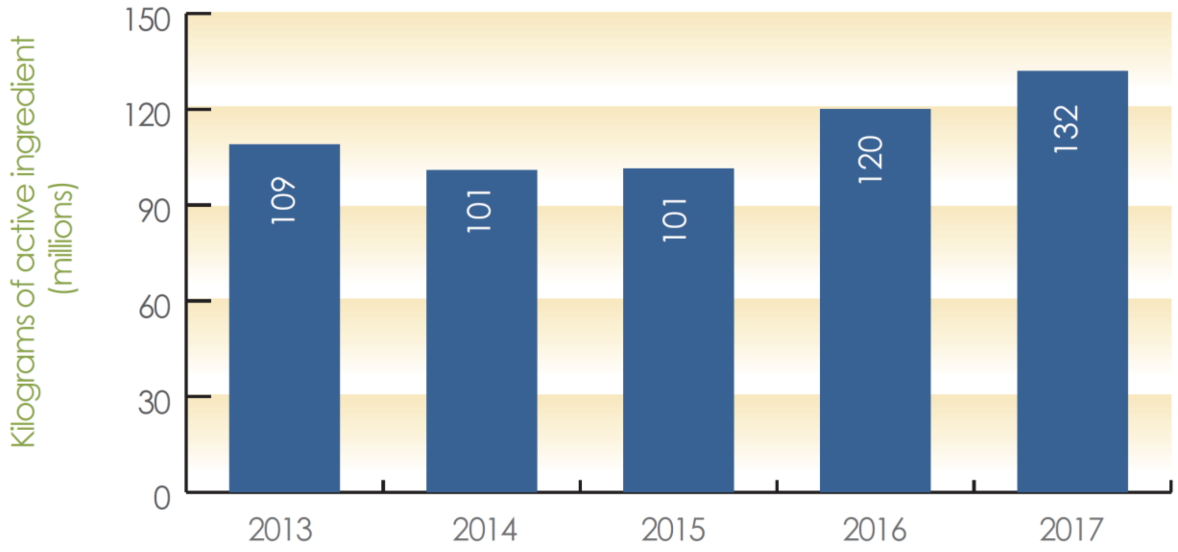


AgbioCrop, 2020

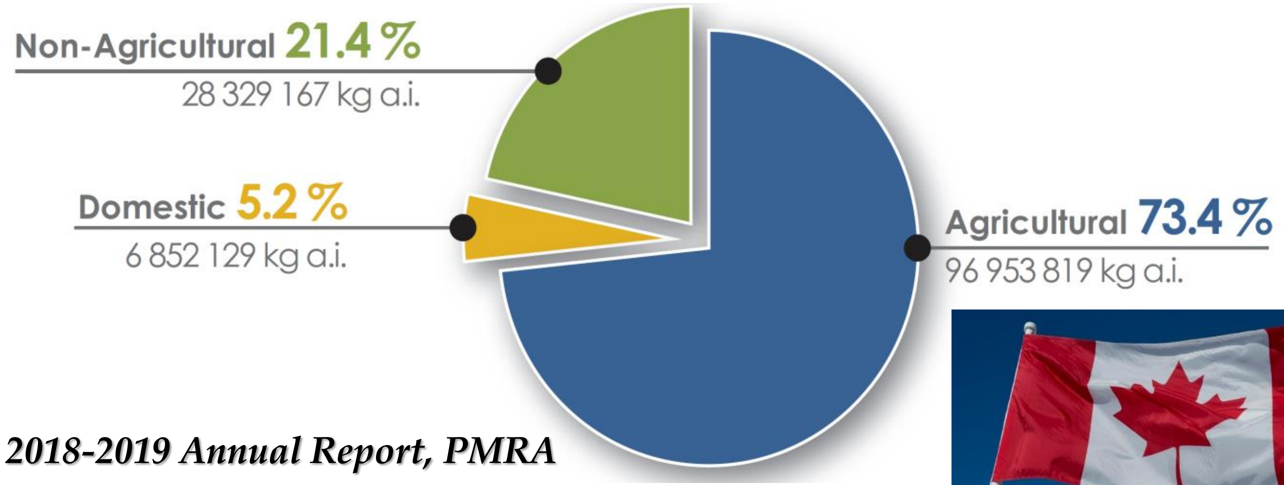
Increase in the number of registered pesticides over time



Quantity of pesticides sold in Canada over five years



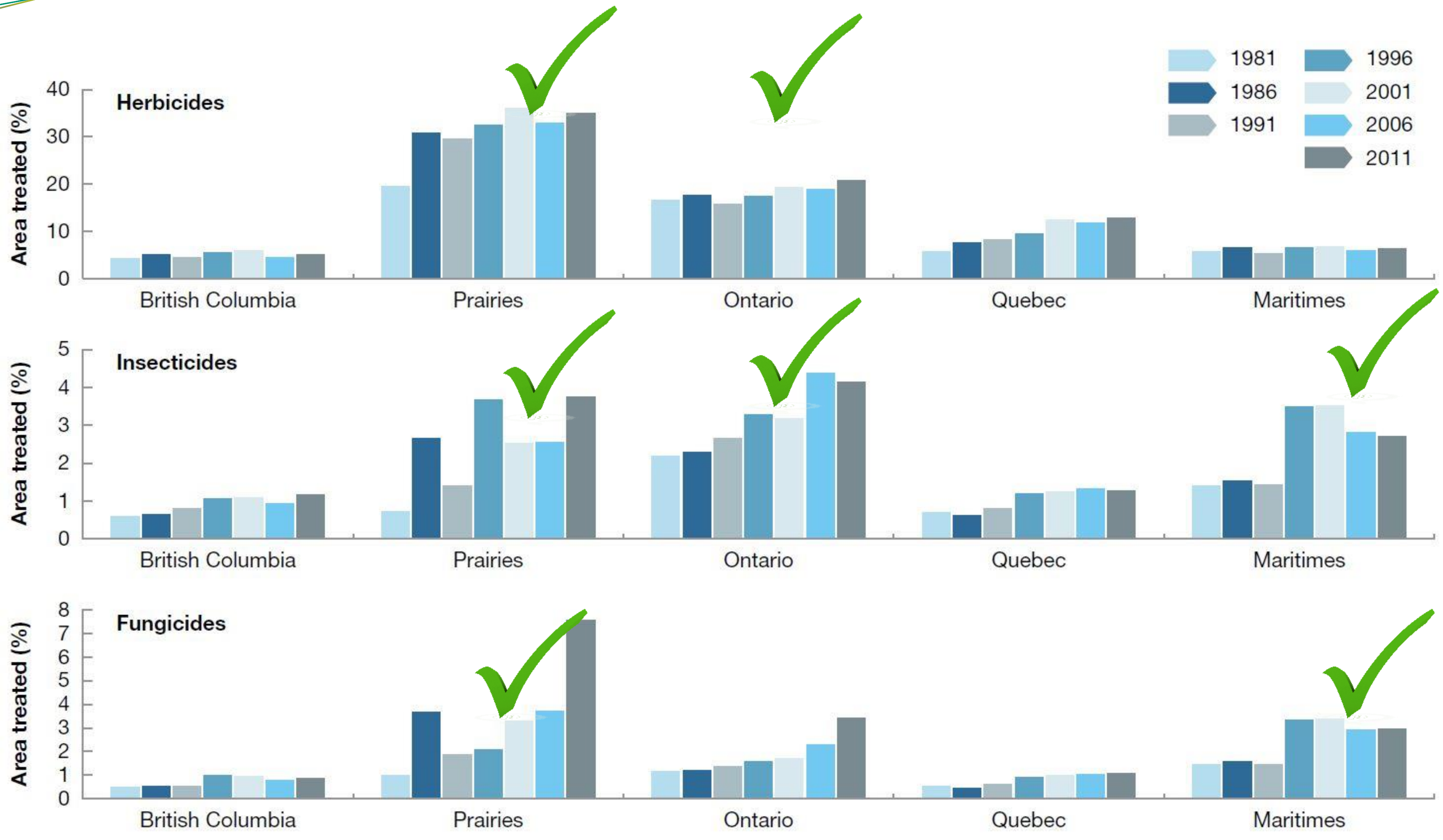
Pesticides sold in Canada in 2017 by sector



2018-2019 Annual Report, PMRA

Area treated with herbicides, insecticides and fungicides

(% of agricultural SLC polygons)



https://www.agr.gc.ca/eng/agriculture-and-climate/agricultural-practices/agriculture-and-water/pesticides-indicator/?id=1462401144426

AAFC, 2020

The Canadian <u>cereal</u> herbicide/ fungicide/insecticide market

- The Canadian cereal **herbicide** market increased by 1.3% in 2018 to $463 million.
- Key weeds in Canadian cereals include varieties such as wild oats and foxtail, both of which are major weed pests in the country. The leading herbicide active ingredient is pinoxaden (CRESTIVO, AXIAL), which has expanded rapidly in recent years although generic competition for Syngenta has now entered the market, followed by glyphosate (Roundup), flucarbazone (Everest) and pyroxsulam (Simplicity).
- Recent introductions in the sector include Adama's Brazen (pinoxaden), for use on both spring wheat and barley for the control of wild oats, green foxtail, yellow foxtail, Persian darnel, volunteer oats, volunteer canary seed and *proso millet*; and *Batalium* (*<u>flucarbazone-sodium / fluroxypyr / MCPA / bromoxynil</u>*) from UPL for use on spring, durum and winter wheat to control a range of grass and broadleaf weeds such as wild oats and green foxtail.
- The leading **fungicides** are the azoles prothioconazole (Proline), tebuconazole (Raxil, Folicur) and metconazole (CARAMBA), with SDHI products yet to make a significant commercial impact. The cereal fungicide market in the country was up by 6.3% to $187 million.
- The leading **insecticides** are imidacloprid (ADMIRE) and thiamethoxam (Helix, Cruiser), reflecting the importance of seed treatments.

The Canadian <u>canola</u> herbicide/ fungicide/insecticide market

- The value of the canola herbicide in the country was static at $194 million in 2018.

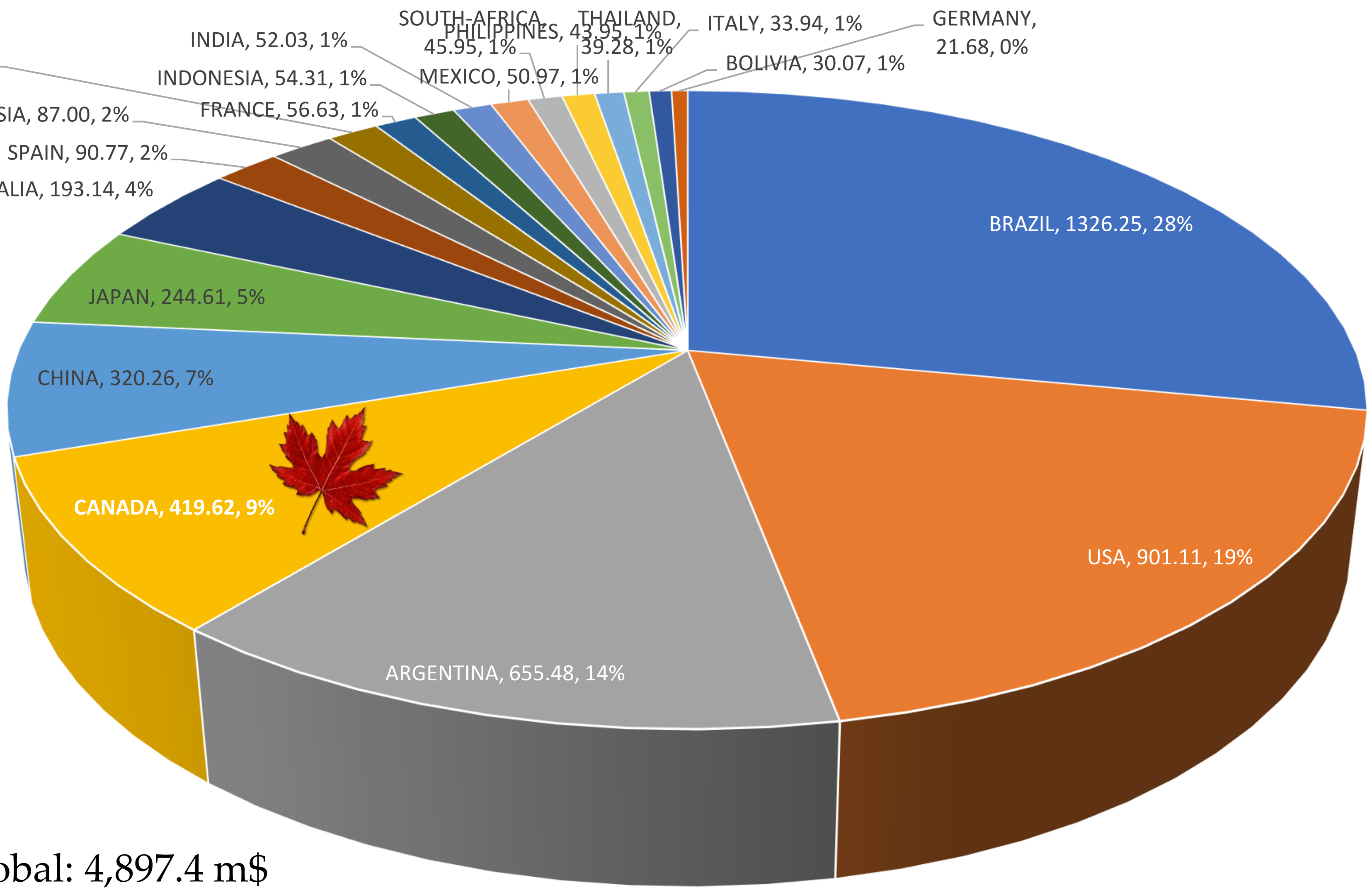
- GM varieties represent approximately 97% of Canada's canola area, with LibertyLink (glufosinate tolerance) technology being the most commonly utilised, followed by Roundup Ready (glyphosate tolerance). As a result,
  - Glufosinate is the leading herbicide.
  - Then glyphosate.
  - The use of Clearfield (imidazolinone tolerance) technology is also widespread, leading to imazamox's (Solo) position amongst the market leaders.
  - Clethodim (Select, Shadow) is also of importance, to control herbicide-resistant weeds.

- Most canola seed in Canada is pre-treated with insecticides, fungicides, or a combination of both. The leading insecticides are clothianidin, followed by thiamethoxam (Cruiser), whilst cyantraniliprole (Verimark) has been making rapid gains in recent years.

- However, the Canadian Pest Management Regulatory Agency has proposed the cancellation of outdoor uses of thiamethoxam (Helix, Cruiser), and clothianidin (Titan) within the next three to five years.

- Prothioconazole (Proline), is by far the leading fungicide, with pyraclostrobin (Headline) and boscalid also of importance. SDHIs such as fluxapyroxad (XEMIUM) have also been making inroads in recent years.

Glyphosate Market Value (m$) in Top 20 Countries (2019)

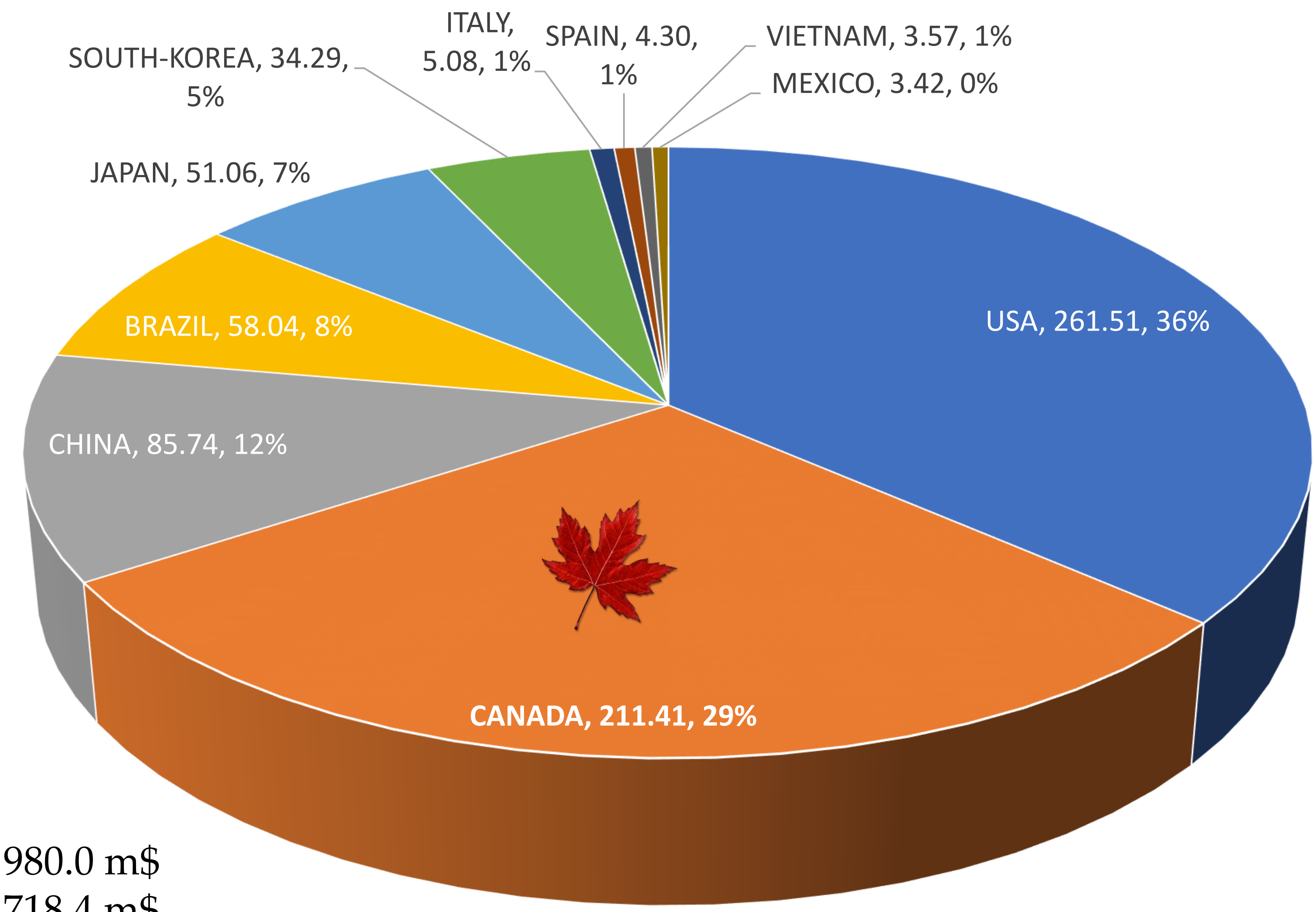


Global: 4,897.4 m$
Top 20: 4,736.3 m$

Hanson Agrichemical Consulting HAC

Phillips McDougall, 2020

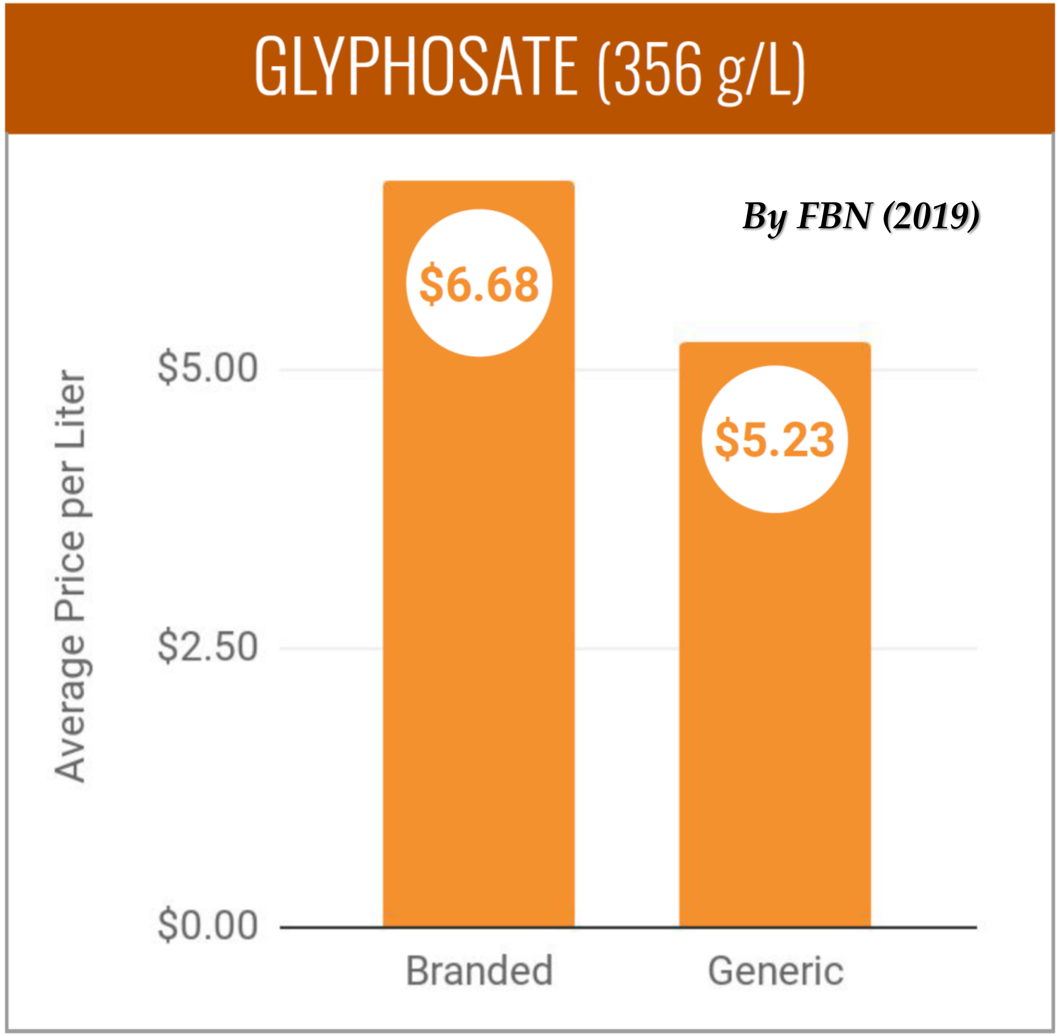
Glufosinate Market Value (m$) in Top 10 Countries (2019)



Global: 980.0 m$
Top 10: 718.4 m$

Phillips McDougall, 2020

Branded vs. Generic



- Exploring alternative chemistry might support your bottom line; as you can see below, buying generic alternatives can potentially save you money***. Farmers reported paying an average of 18 percent and 22 percent less for generic formulations of glyphosate***, respectively, when compared to branded formulations for those two chemicals.

Out of the Top 20 Crop Protection Companies, eleven of them are actually Chinese Ones

- Syngenta (2nd)
- Adama (7th)
- Yangnong Chemical (10th)
- Shandong Weifang Rainbow (11th)
- Beijing Nutrichem (12th)
- Zhejiang Wynca Chemical (13th)
- Nanjing Red Sun (15th)
- Lianyungang Liben Crop Science (16th)
- Lier Chemical (18th)
- Leshan Fuhua Tongda (19th)
- Hubei Xingfa (20th)

http://www.hansonagrochemical.com/

Agrochemical sales[1] of the leading companies

2019 (2018) ranking	Company	$ million[2]	Reported currency million	% change $	% change reported
1 (1)	Bayer Crop Science[3]	13,276 (12,552)	€11,860 (€10,629)	+5.8	+11.6
2 (2) ★	Syngenta	10,588 (10,454)	$10,588 ($10,454)	+1.3	+1.3
3 (3)	BASF	7,119 (6,915)	€6,360 (€5,856)	+3.0	+8.6
4 (4)	Corteva Agriscience	6,256 (6,445)	$6,256 ($6,445)	-2.9	-2.9
5 (5)	FMC	4,610 (4,285)	$4,610 ($4,285)	+7.6	+7.6
6 (6)	UPL4	4,491 (4,083)	Rs 316,260 (Rs 279,644)	+10.0	+13.1
7 (7) ★	Adama	3,611 (3,617)	$3,611 ($3,617)	-0.2	-0.2
8 (8)	Sumitomo Chemical[4]	2,570 (2,515)	na na	+2.2	+2.2
9 (9)	Nufarm[5]	2,526 (2,396)	Aus$3,634 (Aus$3,206)	+5.4	+13.3
10 (10) ★	Yangnong Chemical[6]	1,251 (1,330)	Yuan 8,639 (Yuan 8,792)	-6.0	-1.7
11 (13) ★	Shandong Weifang Rainbow	880 (809)	Yuan 6,074 (Yuan 5,344)	+8.8	+13.7
12 (11) ★	Beijing Nutrichem	757 (937)	Yuan 5,230 (Yuan 6,190)	-19.1	-15.5
13 (15) ★	Zheijang Wynca Chemical	690 (665)	Yuan 4,763 (Yuan 4,393)	+3.8	+8.4
14 (16)	Kumiai Chemical[7]	668 (620)	¥72,623 (¥68,147)	+7.7	+6.6
15 (12) ★	Nanjing Red Sun	657 (890)	Yuan 4,538 (Yuan 5,883)	-26.2	-22.9
16 (19) ★	Lianyungang Liben Crop Science and Technology	617 (561)	Yuan 4,261 (Yuan 3,705)	+10.1	+15.0
17 (18)	Nissan Chemical[4,8]	589 (571)	¥64,038 (¥62,725)	+3.2	+2.1
18 (17) ★	Lier Chemical	586 (605)	Yuan 4,044 (Yuan 4,001)	-3.3	+1.1
19 (14) ★	Leshan Fuhua Tongda Agro-Chemical Technology	571 (721)	Yuan 3,946 (Yuan 4,763)	-20.7	-17.2
20 (-) ★	Hubei Xingfa	523 (509)	Yuan 3,614 (Yuan 3,364)	+2.8	+7.4

[1] unless otherwise stated; [2] converted using average annual exchange rates for 2018 and 2017; [3] includes undisclosed oilseed rape and cotton seed sales; [4] year ended March 31st 2019/20; [5] years ended July 31st 2018 and 19; [6] figures restated; [7] years ended October 31st 2018 and 19; [8] includes undisclosed veterinary product sales.

Summary on China's Pesticide Exports to Canada in 2019

Active ingredient	Formulation	Manufacturers	Value (USD)
Glyphosate	41% (360 g/L)	Nantong, Jiema, Wynca	10,874,619
Glyphosate	540 K	Anhui Huaxing	6,893,406
Glyphosate	30%	Anhui Huaxing	5,730,941
Bromoxynil Octanoate	Technical	Jiangsu Heben	5,584,800
Glyphosate	95% technical	Fuhua, Wynca	4,050,679
Diquat	40%	Nanjing Red Sun, Shandong Luba, Yongnong	3,057,514
Glufosinate ammonium	150 SN	Ningbo Tide, Yongnong	2,768,317
Clodinofop Propargyl	240 EC	Yongnong	1,491,152
Clethodim	240 EC	Shenyang Kechuang, Jiangsu Yunfan	480,970

1) Values of glyphosate shipped to Canada in 2019 was 27.5 m$
2) The China's Glyphosate value at the end-user level was 27.5*1.15=31.7 m$ supposing the margin was 15%
3) The total glyphosate value in Canada (2019) was 419.6 m$ according to AgBioInvestor (2020)
4) Market share of China's generic glyphosate was 31.7/419.6 = **7.6%**
5) **The market share of generic glyphosate can be up to 30% if we take Albaugh, Winfield, UPL etc into considerations**

Our Product Portfolio for Canadian Farmers

Registered

AI Name ***Brand Name***

- Glyphosate IPA 360 (Roundup)
- Glyphosate 540 K (Roundup Weathermax with Transorb 2 Technology Liquid Herbicide)
- Glufosinate ammonium 200 SN (Liberty)
- Glyphosate technical (Roundup)
- Glufosinate technical (Liberty)
- Pinoxaden technical (CRESTIVO, AXIAL)
- Diquat technical (Reglone)
- Clomazone technical (Command)
- Florasulam technical (Frontline)
- S-metolachlor technical (Dual Magnum)
- Boscalid technical (Lance, CADENCE)
- Azoxystrobin technical (QUADRIS, HERITAGE)
- Pyraclostrobin technical (Headline)

Submitted to PMRA

AI Name ***Brand Name***

- Glufosinate ammonium 150 SN (Liberty)
- Pyraclostrobin 250 EC (Headline)
- Cloquintocet mexyl technical
- Clodinafop propargyl technical (Horizon, Signal)
- Clopyralid technical (Lontrel)
- Fluroxypyr meptyl technical (Starane)
- Clethodim technical (Select ,Shadow)

AgriTrade is an Important Trade Platform

Traditional Business Model

Pesticide Manufacturer → Export Agent → Importer → Whole Seller → Dealer → Retailer → Farmer

New Business Model

Pesticide Manufacturer → Farmer

AgriTrade Makes Difference

- AgriTrade is defined to be as a <u>platform</u> on which the supply of generic products meet the needs of Canadian farmers.
- We are shortening the length of supply chain, and transforming the saved operation costs into the margins for retailers and the end users.

Market Outlook

- Crop Acreage Trend
  - Wheat and pulse will be up
  - Canola and soybean will be down due to trading issues with China (40% canola)

- Agchem uses
  - The cancellation of outdoor uses of clothianidin (***Pancho***) on food and feed crops and turf, whilst thiamethoxam (***Helix, Cruiser***) is to be cancelled for outdoor use on food and feed crops and outdoor ornamentals. no direct replacement available on seed treatment uses of these active ingredients.
  - Strobilurins are amongst the most common active ingredients in this sector. However, SDHI products are increasing in significance, notably fluxapyroxad (***BAS 700 01F***) and sedaxane (***Vibrance***).
  - Canada is expected to increase by an annual average of 1.8% till 2023, with growth expected to be led by fungicides.

Enjoy your Sightseeing in Ottawa, Canada