

Makhteshim Agan Industries Overview for Africa



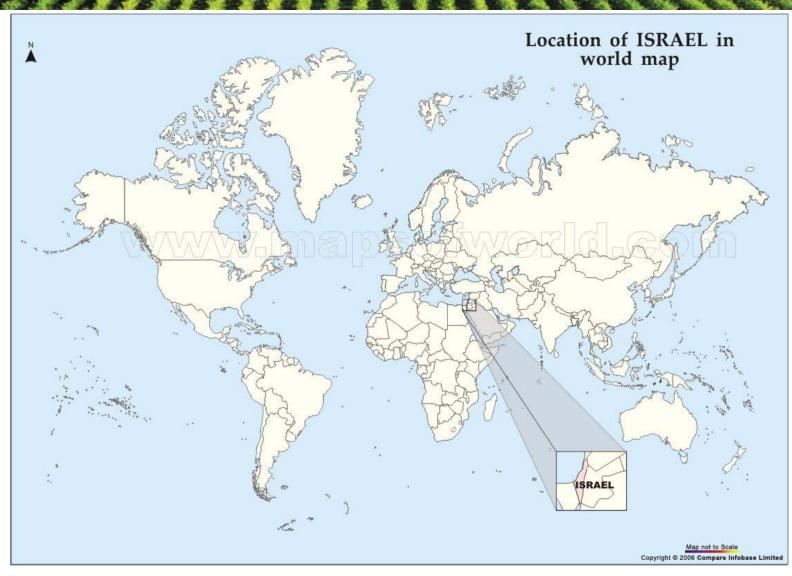
Agenda



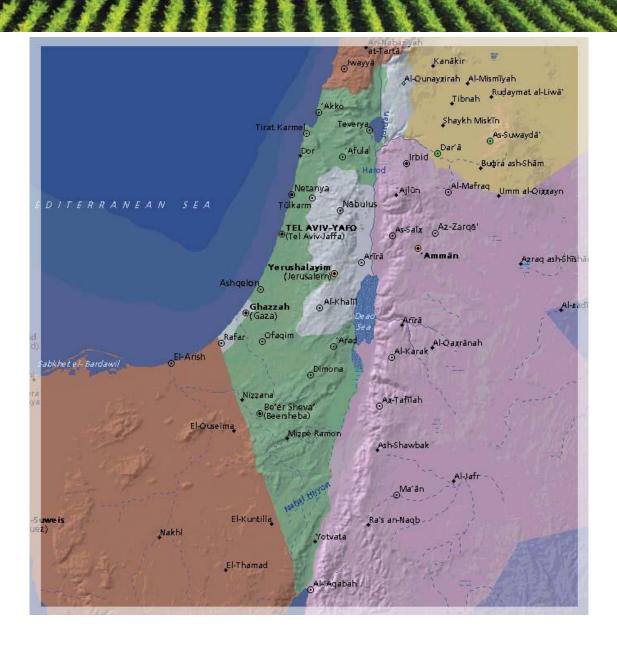
- Introduction- who we are
- Trends in the World
- Portfolio
- Production technology and quality
- Mixtures, Managing Resistance.
- Cocoa

Where Is Israel?









Global Presence





- 42 subsidiaries in 26 countries
- Sales to over 100 countries worldwide
- Over 3000 employees worldwide

No. 1 Generic AgChem player



OUR GOAL Providing our customers a compelling value proposition through comprehensive product solutions, reliable service and responsibility for the environment

Background



- Established in May 1998 as a merger of two publicly traded companies: Makhteshim (Est. 1952, IPO 1992) and Agan (Est. 1945, IPO 1982)
- Publicly traded on TASE since its incorporation
- Focus on: Herbicides, Insecticides and Fungicides
- Non Agro activities: Antioxidants/vitamins, Optical brighteners, Basic chemicals and Aroma chemicals
- Ownership-; Koor Industries: 40%

 Public: 60%

Makhteshim-Agan Business Profile



- World's leading manufacturer and distributor of generic agrochemical products
- Global presence unparalleled presence for generic agrochemicals
 - > #4 largest supplier in West Europe
 - Significant in other geographies Australia, Latin America, North America etc
- Broadest generic product portfolio
 - > 70 Active ingredients
 - > ~500 formulations, mixtures and co-formulations sold worldwide
 - Dominant position in key products
 - 4000 Registrations in 120 countries
- Production organic synthesis expertise
- Development and Registration independent dossiers`

Adapting Strategy to Change - Maintaining Competitive Edge



70's Chemistry and technology

Efficient and sophisticated production facilities with highest environmental awareness

80's

Building regulatory capabilities and expanding global presence

90's

- Acquiring production and distribution base in Latin America
- Acquiring or establishing distribution in key European countries
- Exploiting window of opportunity in Latin America launching 7 new products in 97-98
- Acquiring and developing new products and formulations

Adapting Strategy to Change - Maintaining Competitive Edge



- **00's** Industry consolidation
 - Low agricultural commodity prices at first, followed by steep increase in consumption and prices
 - Restructure program (2000, and now in 2006)
 - Product acquisitions
 - Expanding distribution companies company acquisitions
 - Continued launching of new products
 - Shifting the focus from Latin America to Europe and North America

Capitalizing on an attractive growth opportunity



Increased food consumption driven by population growth and rising standard-of-living (esp. China, India)

Expansion of bio-fuel – ethanol production grew 11% in 2006; expected to continue at 10% p.a.

Ample growth headroom in off-patent products

- 70% of total market already off-patent
- Additional \$5bn in next 6 years

Growing non-crop markets for our core products

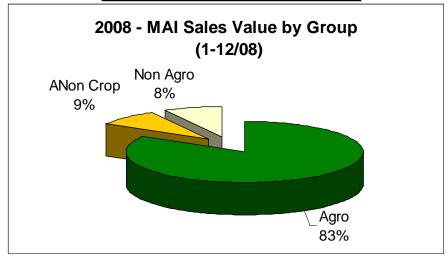
GMOs generating new generic opportunities

- Opportunities such as glyphosate, Clethodim
- Output traits increasing farmers spending propensity

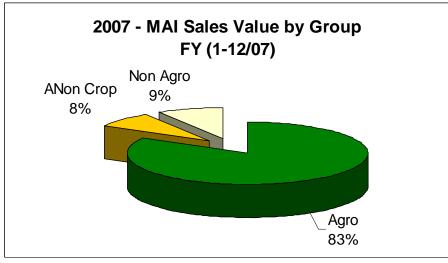
MAIN Focus - Plant Protection



Total Sales: 2,536 M\$

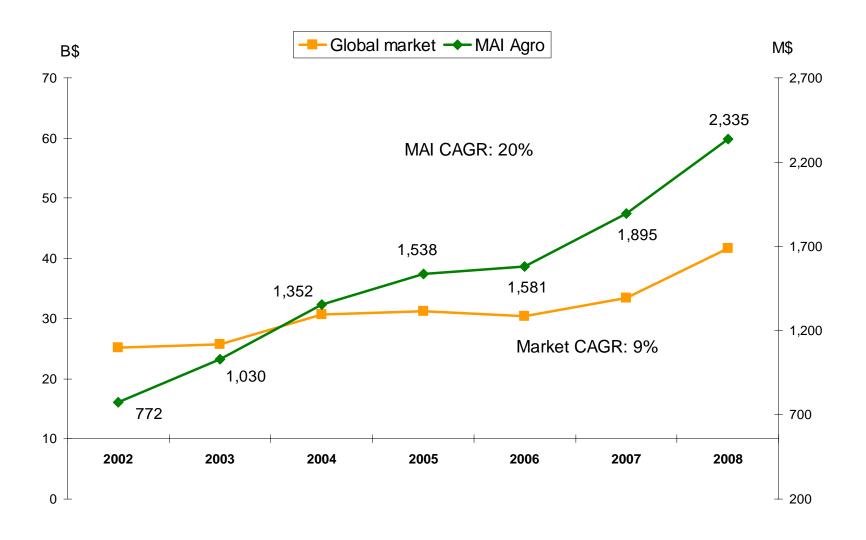


Total Sales: 2,081 M\$



Outperforming the market – track record of continuous growth

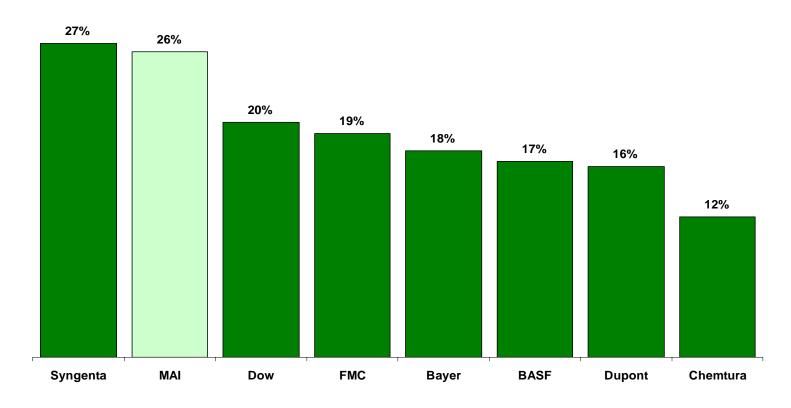




Continue to perform at forefront of sector



Full Year Sales Growth (08' vs. 07')



- MAI Agro sales, adjusted for sale of RiceCo
 Dow results include Agricultural Science
 DuPont sales include Ag & Nutrition before segment eliminations
 Monsanto and Nufarm results are incomparable due to different calendar reporting
 Syngenta reports in USD; Bayer and BASF data calculated using average FX rates for the period
 UPL does not provide segmental breakdown on a consolidated basis
 Source: Phillips McDougall, companies' disclosure; MAI analysis

Leading generic firm (Agrochemical market)



#	Company	2007	2008	% Change
1	Syngenta	7,285	9,231	27%
2	Bayer (Excluding seed)	7,447	8,682	17%
3	Monsanto*	3,753	5,333	42%
4	BASF	4,291	4,991	16%
5	Dow AgroSciences (Excluding seed)	3,414	4,065	19%
6	DuPont	2,400	2,640	10%
7	MAI	1,879	2,335	24%
8	Nufarm**	1,819	2,287	26%
9	Sumitomo Chemical	1,248	1,378	10%
10	Arysta	1,036	1,170	13%

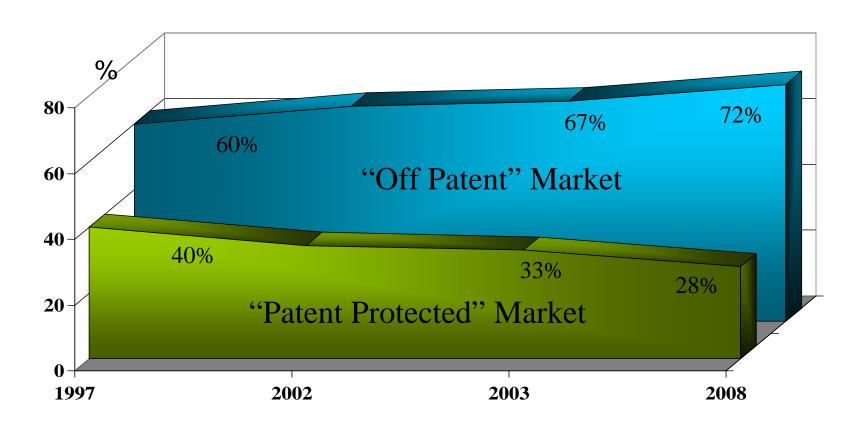
^{*} Includes seed and traits

^{** 12} Month results to November 2008

^{*** 12} Month results to January 2009

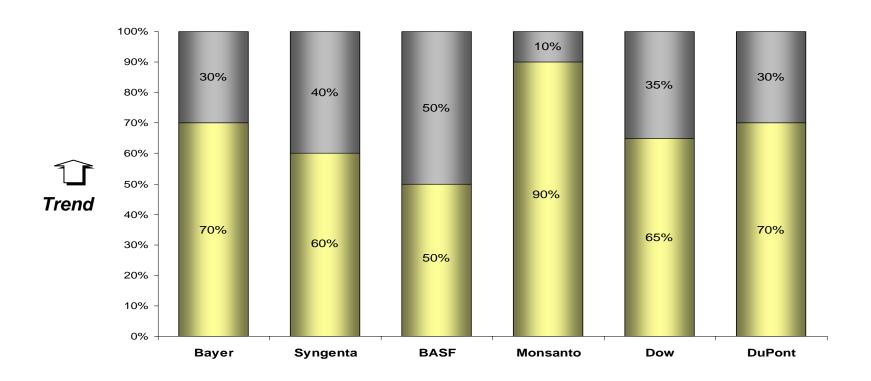
The Generic Market Potential Growth







Off Patent market increases

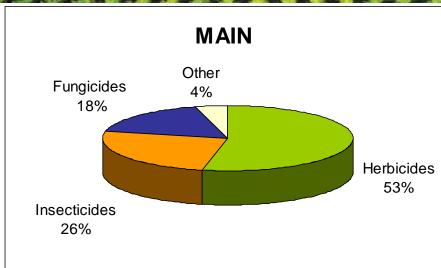


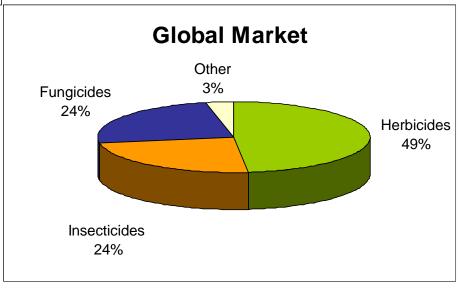
Off-patent and proprietary off-patent sales

Patented sales

Balanced and Diversified Product Portfolio - 2007

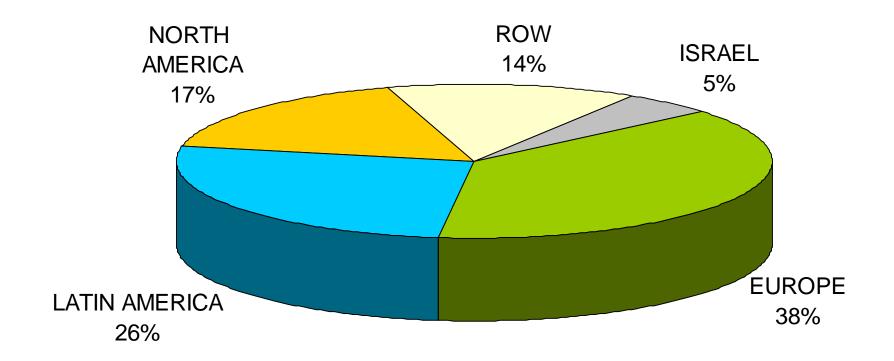






Diversified Geographic Profile







PRODUCTION

Agan Production Site (Ashdod)



- GLP labs
- ISO 9001 (updated to 2000)
- ISO 14001- environmental since 1999, TA LUFT
- ISO 18000 safety management

CONTROL ROOM

PRODUCTION







Makhteshim Production Site (Ramat Hovav)





Makhteshim Production Site (Ramat Hovav)





Computerized Control Rooms





ISO 9001 - Quality Management System





Certificate

This is to certify that the Quality Management System of

MAKHTESHIM CHEMICAL WORKS LTD.

BEER SHEVA, ISRAEL

has been audited by SII and found to comply with the Quality Management Standard SI ISO 9001: 2000

scope:

DESIGN AND RESEARCH AND PRODUCTION OF:

PLANT PROTECTION PRODUCTS, CHLOR ALKALI PRODUCTS,

CARBON DIOXIDE, OPTICAL BRIGHTENERS, INDUSTRIAL

CHEMICALS AND INTERMEDIATES.

The Certificate is granted in accordance with SII's Rules for the Certification of Quality Systems (SII procedure-002). The validity of the Certificate is subject to the continuous maintenance of the Quality System according to the above standard, and the follow-up surveillance performed by SII. Further clarifications regarding the scope of the certificate and applicability of ISO 9001:2000 requirements may be obtained by consulting the organization.

Date of initial approval: 19 . 11 . 1993 Date of expiration: 31 . 12 . 2009

License No: 33462

Date of issue: 01 . 01 . 2007

THE STANDARDS INSTITUTION OF ISRAEL









Certificate

This is to certify that the Quality Management System of

AGAN CHEMICAL MANUFACTURERS LTD.

ASHDOD

has been audited by SII and found to comply with the Quality Management Standard SI ISO 9001: 2000 scope:

DESIGN, PRODUCTION AND FORMULATION OF AGRICULTURAL

CHEMICALS

The Certificate is granted in accordance with SII's Rules for the Certification of Quality Systems (SII procedure-002). The validity of the Certificate is subject to the continuous maintenance of the Quality System according to the above standard, and the follow-up surveillance performed by SII. Further clarifications regarding the scope of the certificate and applicability of ISO 9001 2000 requirements may be obtained by consulting the organization.

Date of initial approval: 07 . 12 . 1993 Date of expiration:

28.02.2007

License No: 34840

Date of issue: 12 . 02 . 2004









ISO 14001 – Environmental Management





Certificate

This is to certify that the

Environmental Management System of

MAKHTESHIM CHEMICAL WORKS LTD.

BEER SHEVA, ISRAEL

has been audited by SII and found to comply with the Environmental Management Standard SI ISO 14001: 2004

scope:

DESIGN AND RESEARCH AND PRODUCTION OF:

PLANT PROTECTION PRODUCTS, CHLOR ALKALI PRODUCTS,

CARBON DIOXIDE, OPTICAL BRIGHTENERS, INDUSTRIAL

CHEMICALS AND INTERMEDIATES.

The Certificate is granted in accordance with SII's Rules for the Certification of Environmental Management Systems (SII procedure-009). The validity of the Certificate is subject to the continuous maintenance of the System according to the above standard, and the follow-up surveillance performed by SII.

Date of initial approval; 29 . 09 . 1997 Date of expiration:

31 . 03 . 2007

License No:

40737 Date of issue: 26 . 03 . 2006









This is to certify that the

Environmental Management System of

AGAN CHEMICAL MANUFACTURERS LTD.

has been audited by SII and found to comply with the Environmental Management Standard: SI ISO 14001

scope:

PRODUCTION AND FORMULATION OF AGRICULTURAL

CHEMICALS.

The Certificate is granted in accordance with SII's Rules for the Certification of Environmental Management Systems (SII procedure-009). The validity of the Certificate is subject to the continuous maintenance of the System according to the above standard, and the follow-up surveillance performed by Stl.

Date of initial approval: Date of issue:

Date of expiration:

01 . 02 . 2002 28 . 02 . 2005







ISO 18000 - Health and Safety System





Certificate

This is to certify that the Health and Safety System of

MAKHTESHIM CHEMICAL WORKS LTD.

has been audited by SII and found to comply with the Occupational Health and Safety Management Standard: SI OHSAS 18001

scope:

PRODUCTION OF: PLANT PROTECTION PRODUCTS, CHLOR

ALKALI PRODUCTS, CARBON DIOXIDE, OPTICAL

BRIGHTENERS, INDUSTRIAL CHEMICALS & INTERMEDIATES.

The Certificate is granted in accordance with SII's Rules for the Certification of Occupational Health and Safety Management Systems (SII procedure-014). The validity of the Certificate is subject to the continuous maintenance of the System according to the above standard, and the follow-up surveillance performed by SII.

Date of initial approval: 23 . 01 . 2000 Date of expiration:

License No: 21032 Date of issue: 01 . 12 . 2004







Certificate

This is to certify that the Health and Safety System of

AGAN CHEMICAL MANUFACTURERS LTD.

has been audited by SII and found to comply with the Occupational Health and Safety Management Standard: SI OHSAS 18001

scope:

PRODUCTION AND FORMULATION OF AGRICULTURAL

CHEMICALS.

The Certificate is granted in accordance with SII's Rules for the Certification of Occupational Health and Safety Management Systems (SII procedure-014). The validity of the Certificate is subject to the continuous maintenance of the System according to the above standard, and the follow-up surveillance performed by Sit.

Date of initial approval: 07 . 11 . 2000 Date of expiration:

License No: 22092 Date of issue: 01 . 12 . 2003









THE STANDARDS INSTITUTION OF ISRAEL



GLP



- Originally Certified in 1996 by the German authorities.
- Agan and MCW are the first labs in Israel to have this accreditation (Out of 6 labs in Israel)
- Enables to present studies to authorities all over the world.



GLP Statement of Compliance No. 072/04

Test Facility Name:

Agan Chemical Manufacturers Ltd.

P.O. Box 262, Ashdod, ISRAEL

Valid from 02.05.2004

Until 02.05.2006

The test facility has been inspected by the Israel GLP compliance monitoring unit and has been found to be in compliance to OECD Principles of Good Laboratory Practice (GLP) according to directive 88/320/EEC in the following areas of expertise:

- Analytical Chemistry
- Physical-chemical testing.

Israel Laboratory Accreditation Authority (ISRAC) recognizes and confirms that the test facility is able to conduct the aforementioned studies in compliance with the OECD principles of GLP.





Key Points



- Understanding the market and the farmer needs
- Strong and reliable supplier
- Dynamic and growing
- Broad portfolio
- Financial strengths
- Growing range of products, better formulations
- Superior customer service
- Global reach with local expertise

Your Success is Our Success!



AFRICA TODAY

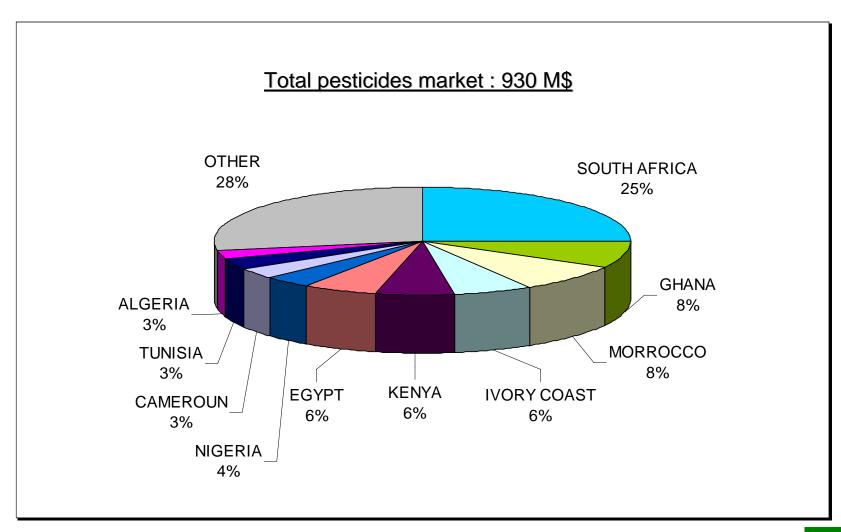
Africa Agrochemical market





African pesticides Market by country (\$)

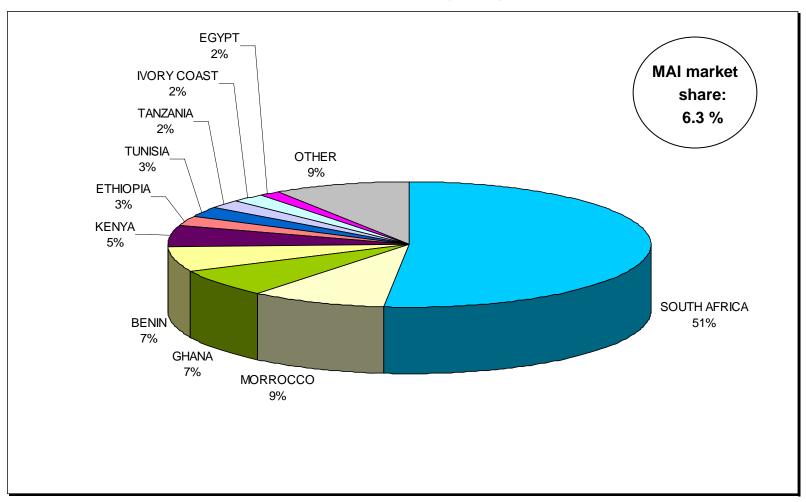




MAI sales value by country (\$)



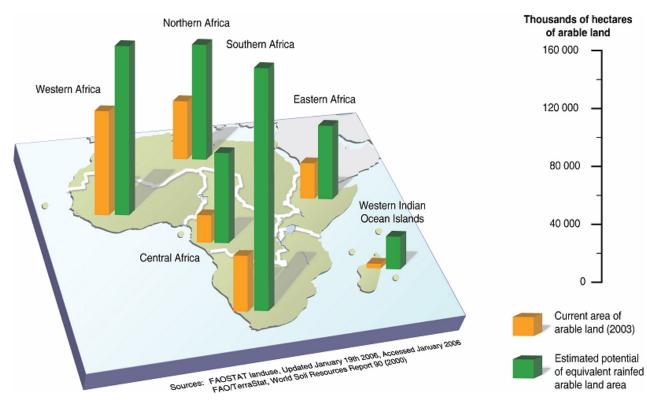
Total MAI sales value (2008): 61M\$



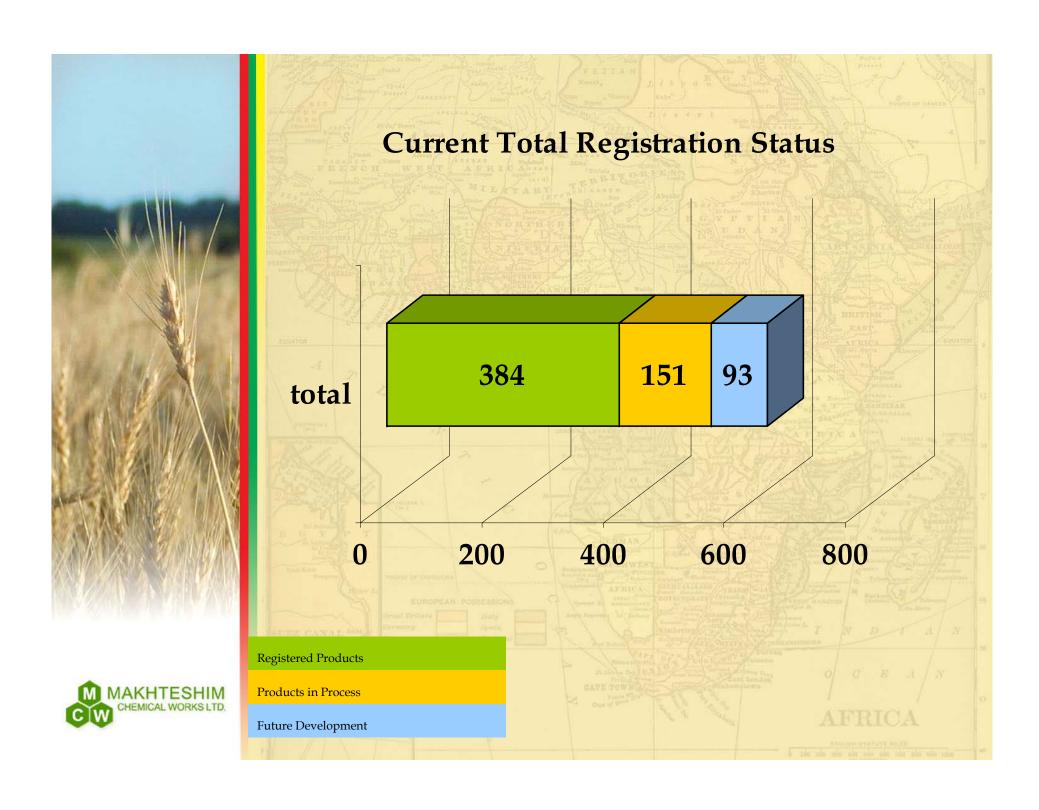
Land of High potential



Out of the total land area in Africa, only a fraction is used for arable land. the potential – if realized – would mean an increase ranging from 150 – 700% percent per region, with a total potential for the whole of Africa in 300 million hectares.



Source: FAO



New Fungicides of MAI



- Fosetyl Al
- Dimethomorph
- Fluazinam
- -Fenpropidin
- Iprodione
- Cyprodinil
- Copper hydroxide
- Pyrimethanil

- Difenoconazole
- Thiophanate M
- Azoxystrobine
- Benthiavalicarb* (for some regions only)

New Fungicides Mixtures



- -Dimethomorph80+Chlorthalonil400
- Azoxi 200 + Tebu 120
- Dimethomorph + Folpet/ Copper Hydroxide
- Fluazinam200+ Dimethomorph200
- Bupirimate + Difenoconazole
- Azoxi + Folpet
- Tebu +Pochloraz
- Azoxi + Ch.Th
- Cyprodinil + Fluazinam
- Benthiavalicarb + Folpet

New Insecticides of MAI



- Imidacloprid
- Acetameprid
- Abamectin
- Thiacloprid
- Fipronil
- Emamectine
- MCW 2
- 2 new patented insecticides

- Spinosad
- Indoxacarb
- Thiamethoxam
- Indoxacarb
- Flufenuxoron

New Mixtures



- Aceta10g/I+ Emamectin10g/I
- Aceta16g/I+ Lambda 30g/I
- Aceta30g/I+Novaluron 75g/I
- Aceta16g/I+ Bifenthrin 30g/I
- Imidacloprid100g/I + Bifenthrin30g/I
- Novaluron35g/I+ Bifenthrine30g/I
- Novaluron75g/l+ Emamectin20g/l
- Clofentezine +Bifenthrin
- Chlorpyrifos300g/I+ Bifenthrine60g/I
- Chlorpyrifos300g/l+ Deltamethrine12g/l
- Chlorpyrifos300g/l+ Lambda15g/l
- Novaluron 100g/l + Imida 60g/l
- Emamectin + Imidacloprid
- Thiacloprid + Flufenuxoron
- Indoxacarb + Acetameprid

Tank Mix Opportunities



- A Tool to use when needed but not for all farmers (knowledge, abilities)
- Professional tool for better performance-;
- Resistance
- Synergism
- Saving tool (labor, Machinery, Energy, Chemicals consumption)



Ghana – Cocoa Sector

Ghana – Market overview



Total area of agricultural land 14,850,000 ha

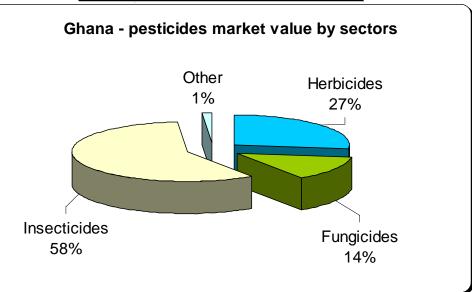
Arable land – 4,100,000 ha

Pesticides market value – 98M\$

Main crops - cocoa, rice, cassava (tapioca), peanuts, corn, shea nuts, bananas



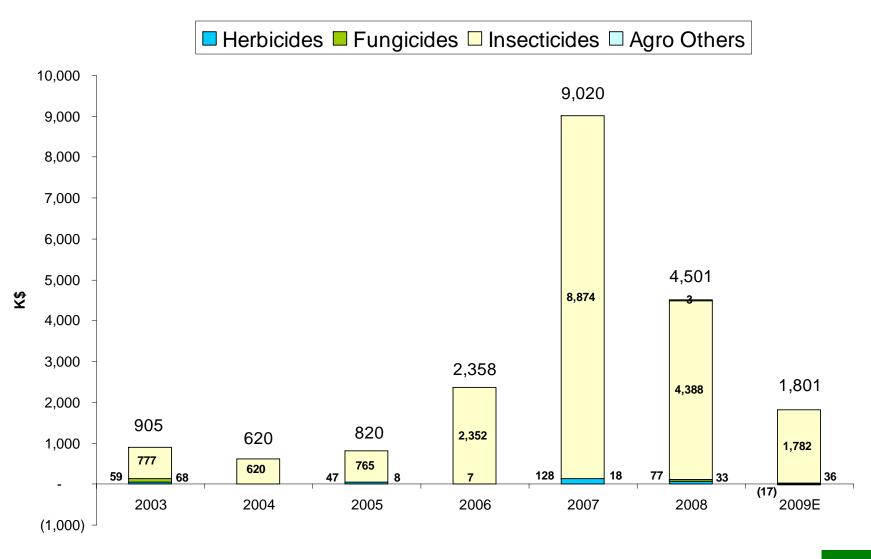
Total pesticides market: 98M\$



Source: FAO, MAI Analysis, CIA fact book

Ghana Sales value (K\$) 2003-2009E





The Agro Chemicals' Future in Ghana as we see it



- The Cocoa sector does face problems of quality and yield; no proper crop solution package (no many MOA in use, no specific products).
- Currently Total Organic Cropping Methods won't improve the production
- We have to work with as many more specific products which won't harm in beneficials and the environment.
- We have to implement and to use IPM (emphasis on selective use of chemicals.
- We have to provide dynamic alternation programs every year.
- We have to strictly follow FRAC and IRAC recommendation and MOA classification.
- We have to use of course as many mode of action as possible.
- We have to monitor resistance records by agreed protocols.

Cocoa



MARKET PRODUCTS

Insecticides:

Diazinon

Imidachloprid

Thiometaxam

Acetamiprid

Bifenthrin

Fungicides:

Metalaxil

Copper

Mancozeb

Copper Oxychloride

MAI PRODUCTS UNDER DEVELOPMENT

Insecticides:

Novaluron + Bifenthrin

Aceta + Bifenthrin / Lambda -

cyhalothrin

Imidacloprid+ Bifenthrin

(Synergism was observed)

Thiacloprid + Novaluron

Flufenuxoron + Acetameprid

***1

***2

Fungicides:

DMM + Chlorthalonil

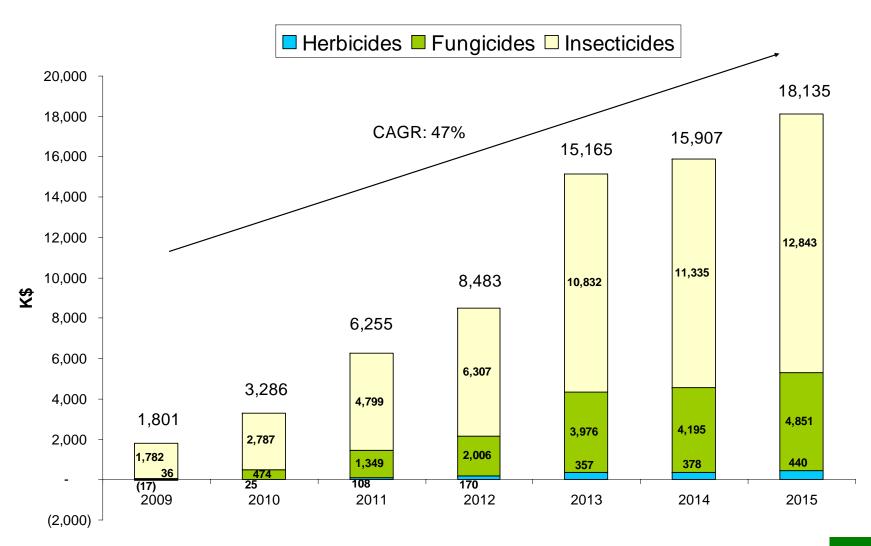
Fluazinam + DMM

Folpet + Benthiavalicarb



Ghana – Strategic sales plan 2009-15 (K\$)





Mirids







Cocoa

Cocoa Borer & its damage











Cocoa

Phytophthora



Phytophthora Magykarya

Phytophthora Palmivera

















Thanks