Overview of Agriculture and Fertilizer Consumption in Thailand

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Thailand: the Largest Exporter of

Rice

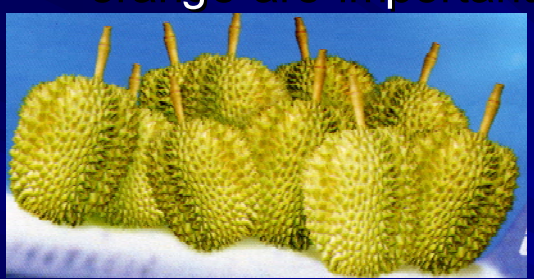
Rubber

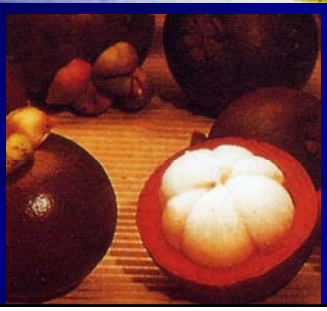
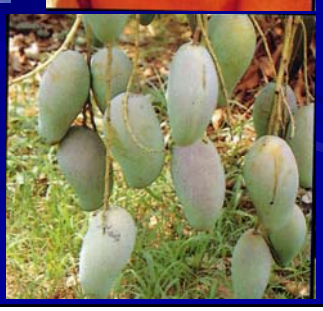
Black tiger prawn

Thailand: the Important Exporter of

- Pineapple
- Sugar and products
- Cassava

Mango, durian, mangosteen and orange are important fruit crops



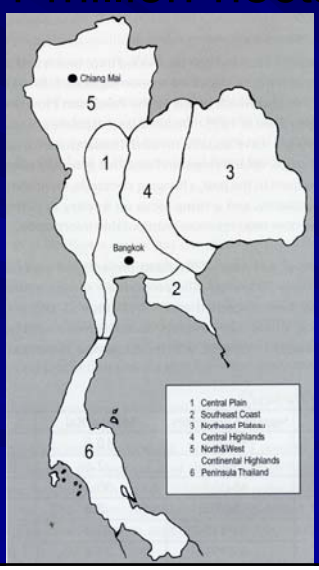



Orchids are important cut flower plants



Total land area 513,112 km^2

(51.4 million hectares)



Land Use

Land use	Million ha
Rice	10.1 (47.4%)
Field crops	5.4 (24.4%)
Vegetables	0.2 (0.9%)
Fruit trees and trees	3.5 (16.4%)
Livestock and other	2.1 (9.9%)
Total	21.3 (100%)

Overview of Crop Production

Crop Production in 2004/2005

Crop	Million tonnes	Tonne/ha
Major rice	18.65	2.36
Maize	4.22	3.87
Cassava	16.94	17.18
Soybean	0.24	1.51
Oil palm	5.18	16.74

Rice Production by Region in 2004/2005

Region	Million ha	Million tonnes	Tonne/ha
North	2.04(22.2%)	5.08(27.2%)	2.77
Northeast	5.28(57.4%)	7.91(42.4%)	1.84
Central	1.59(17.3%)	4.87(26.1%)	3.34
South	0.34(3.1%)	0.79(4.3%)	2.46

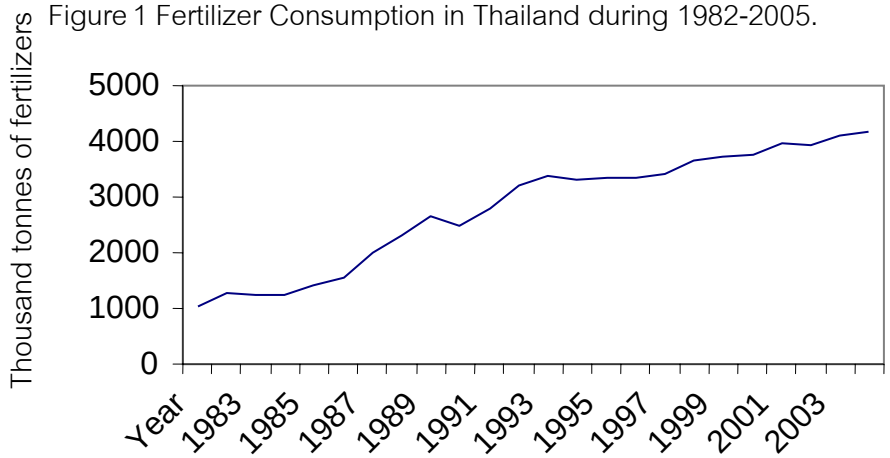
Crop Production in 2004/2005

Crop	Million tonnes	Tonne/ha
Durian	0.83	7.17
Mangosteen	0.24	5.48
Longan	0.63	5.77

Target of Agricultural Development in 2009

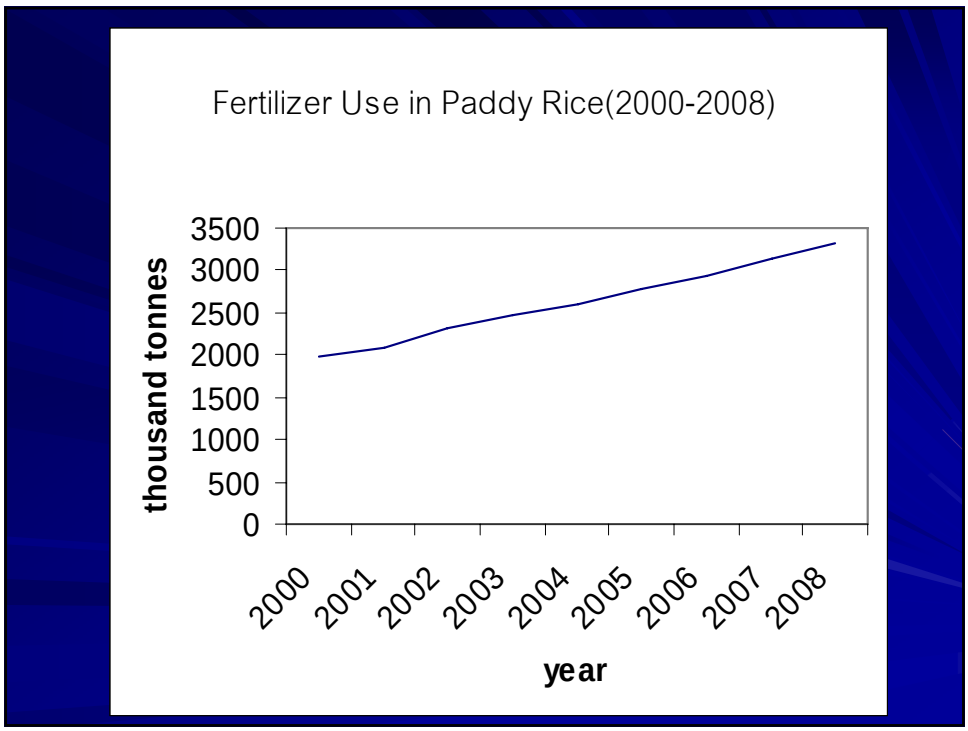
To increase	Million ha
Irrigation area	0.16
GAP planting area	3.20
Para rubber planting area	0.16
Oil palm planting area	0.16
Organic farming	0.05

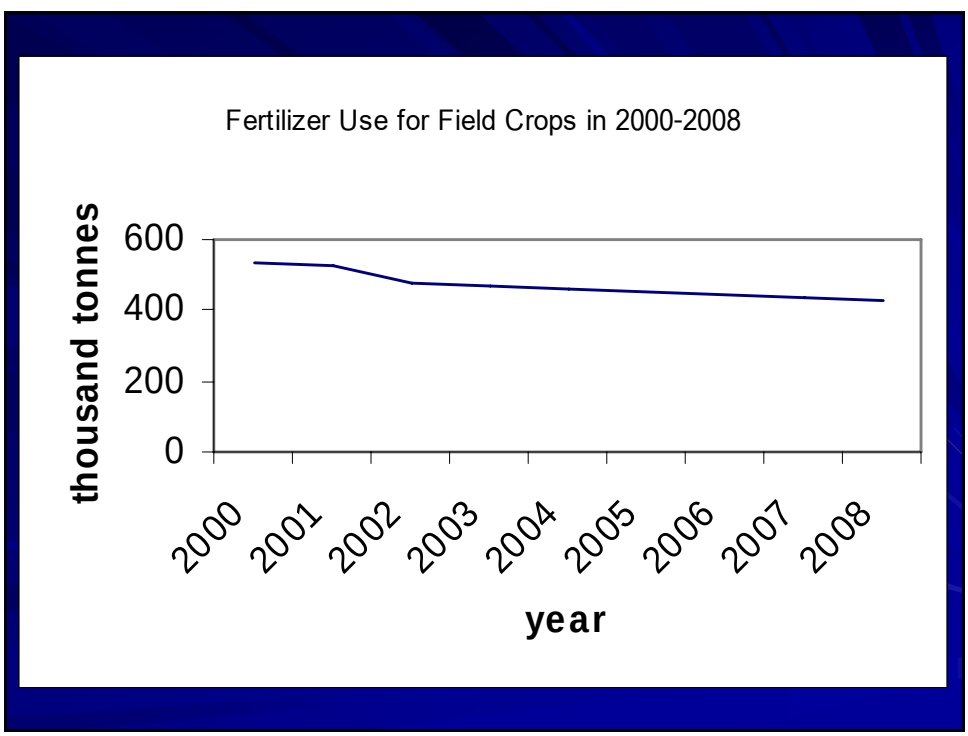
Figure 1 Fertilizer Consumption in Thailand during 1982-2005.



Main Types and Quantity of Imported Fertilizers in 2005

Fertilizer grades	Thousand tonnes
46-0-0	1,428
0-0-60	403
18-46-0	292
21-0-0	268
16-20-0	224
15-15-15	208


Fertilizer Use in Paddy Rice(2000-2008)
thousand tonnes
3500
3000
2500
2000
1500
1000
500
0
2000
2001
2002
2003
2004
2005
2006
2007
2008
year


Fertilizer Use for Field Crops in 2000-2008
thousand tonnes
600
400
200
0
2000
2001
2002
2003
2004
2005
2006
2007
2008
year

Fertilizer Consumption Forecasts

Year	N	P_2O_5	K_2O
2005/06 forecast	1050	370	310
2006/07 forecast	1100	390	320
2007/08 forecast	1120	400	325
2008/09 forecast	1140	410	330
2009/10 forecast	1160	415	330

Fertilizer Consumption Forecasts in 2009/10 in the best and worst case scenarios

Nutrient	Best	Worst
N(x1000 t)	1,200	1,000
P_2O_5(x1000 t)	425	350
K_2O(x1000 t)	350	300

Fertilizer Production

- TCCC: produce compound fertilizer by Steam Granulation Process
- 150 companies:

  produce bulk blending fertilizer

Local Bulk Blending Plants Granulate Standard Grade MOP

Bulk blending fertilizer production

KCl(0-0-60) + Filler

Pan granulator

Granular KCl(0-0-40)

Pan granulator

Dryer

Granular KCl(0-0-40)

Mixer

Different grades of mixed fertilizers

Important Factors Contributing to the Trend of Fertilizer Use

- Crop diversification
- Climate
- Fertilizer price and distribution
- Credit

Agronomic Modification Affecting Medium-Term Fertilizer Demand

- GAP project area
  - Vegetables
  - Fruit crops
  - Other crops
- New planting area
  - Para rubber
  - Oil palm
  - Other crops

Climatic and Economic Conditions Affecting Medium-Term Fertilizer Demand

- Climate, irrigation
  - Rainfall intensity and distribution
  - Expansion of new irrigation area
- Economic condition
  - Fertilizer price
  - Export
  - Economic policy

Water Resources Development by Region

Region	Irrigated area (1000 ha)
North-east	756
North	1,098
Central plain	2,216
South	465
Total	4,535

Irrigation area

23.50% of agricultural area

Irrigation development is necessary

Fertilizer Prices Vary Widely Depending on

- Supply sources
- Location and transportation cost

Cheap Suppliers

- **Marketing Organization for farmers (MOF)**
- **Bank of Agriculture and Agricultural Co-operatives (BAAC)**

General Impact of Fertilizer Use on Crop Production

- Low application rate
- Current practice
- Imbalance of nutrients in fertilizers
- Low fertilizer use efficiency
- Secondary and micronutrient deficiency in soils

Average Nutrient Application Rate

Year	Kg/ha ($N+P_2O_5+K_2O$)
1982/83	18.1
1986/87	23.6
2003/2004	52.3

Official Fertilizer Application Base on Soil Chemical Analysis

- Organic matter content (%)
- Available phosphorus (mg/Kg)
- Exchangeable potassium (mg/Kg)

N Fertilizer Recommendation for Maize

%OM	Kg N/ha
<1	125
1-2	95
>2	62

P Fertilizer Recommendation for Maize

mgP/Kg	Kg P_2O_5/ha
<10	95
10-15	50
>15	30

K Fertilizer Recommendation for Maize

mgK/Kg	Kg K_2O/ha
<60	90
60-100	50
>100	30

Problem Soils

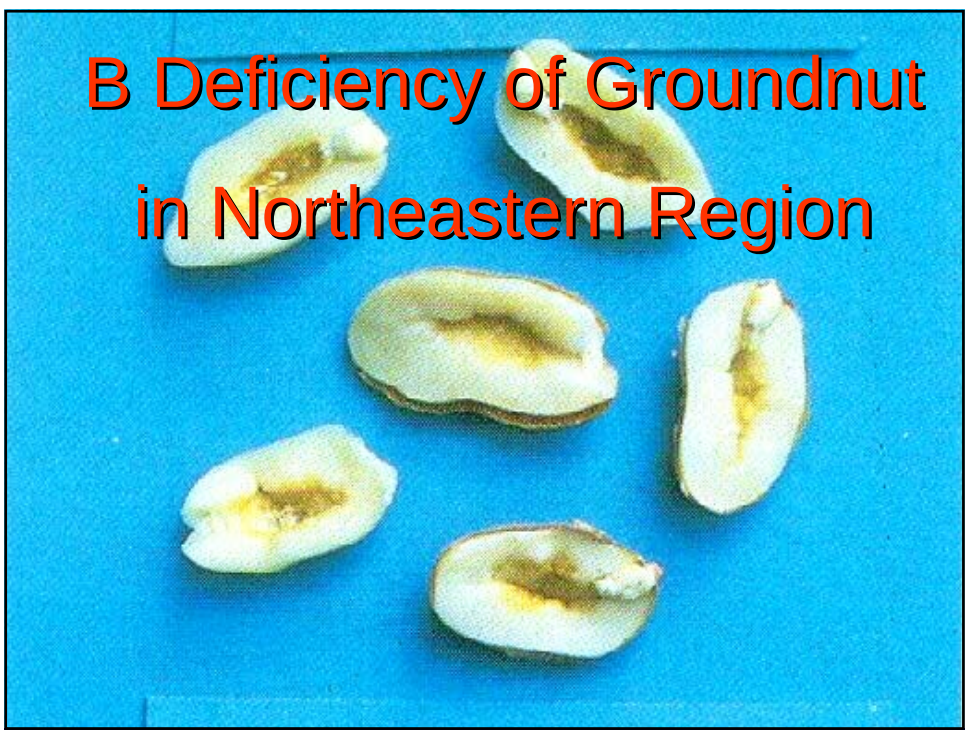

Saline soils


Sandy soils

Acid sulphate soils

Secondary and Micronutrient Deficiency in Soils


Calcareous Soil 0.96 mha.
(Fe deficiency in groundnut)


B Deficiency of Groundnut
in Northeastern Region


Thank you