THAILAND DAIRY INDUSTRY

Department of Livestock Development
Thailand
Thailand is located between latitude 5 degrees 37 minutes north and 20 degrees 27 minutes north and longitude 97 degrees 22 minutes East to 105 degrees 37 minutes East.

513,115 km² Area.
47.37% Agriculture, Forest 33.44%
1,012,831 million cubic meters rainfall/year.
66.7 million Population.
<table>
<thead>
<tr>
<th>Year</th>
<th>Dairy Cattle (heads)</th>
<th>Grow Rate (%)</th>
<th>Dairy Farm (households)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>478,836</td>
<td>17.26</td>
<td>23,374</td>
</tr>
<tr>
<td>2006</td>
<td>410,986</td>
<td>-14.17</td>
<td>20,907</td>
</tr>
<tr>
<td>2007</td>
<td>489,593</td>
<td>19.13</td>
<td>21,230</td>
</tr>
<tr>
<td>2008</td>
<td>469,937</td>
<td>-4.01</td>
<td>19,214</td>
</tr>
<tr>
<td>2009</td>
<td>483,899</td>
<td>2.97</td>
<td>17,837</td>
</tr>
<tr>
<td>2010</td>
<td>529,572</td>
<td>9.44</td>
<td>19,863</td>
</tr>
<tr>
<td>2011</td>
<td>554,468</td>
<td>4.70</td>
<td>20,645</td>
</tr>
<tr>
<td>2012</td>
<td>556,758</td>
<td>2.22</td>
<td>20,624</td>
</tr>
</tbody>
</table>

Source: DLD
Dairy Cow Density of Thailand on 2010

Highly Density Area
4 Province
1. Saraburi 17.85 %
2. Nakornratchasima 17.20 %
3. Lopburi 11.17 %
4. Ratchaburi 10.03 %

Source: DLD
# Dairy Milk Production in Thailand

<table>
<thead>
<tr>
<th>Year</th>
<th>Dairy Milk Production (tons)</th>
<th>Grow Rate (%)</th>
<th>Milking Cows (heads)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>781,043</td>
<td>4.61</td>
<td>296,472</td>
</tr>
<tr>
<td>2006</td>
<td>759,894</td>
<td>-2.71</td>
<td>310,085</td>
</tr>
<tr>
<td>2007</td>
<td>750,779</td>
<td>-1.20</td>
<td>291,965</td>
</tr>
<tr>
<td>2008</td>
<td>775,864</td>
<td>3.34</td>
<td>293,185</td>
</tr>
<tr>
<td>2009</td>
<td>882,933</td>
<td>13.80</td>
<td>293,287</td>
</tr>
<tr>
<td>2010</td>
<td>933,310</td>
<td>5.71</td>
<td>301,071</td>
</tr>
<tr>
<td>2011</td>
<td>984,960</td>
<td>5.53</td>
<td>310,522</td>
</tr>
<tr>
<td>2012</td>
<td>1,064,270</td>
<td>8.05</td>
<td>295,634</td>
</tr>
</tbody>
</table>

Source: DLD, OAE
## Dairy Milk Price

<table>
<thead>
<tr>
<th>Year</th>
<th>Farm Gate Price (Baht/kg.)</th>
<th>Factory Gate Price (Baht/kg.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>11.48</td>
<td>12.50</td>
</tr>
<tr>
<td>2006</td>
<td>11.50</td>
<td>12.50</td>
</tr>
<tr>
<td>2007</td>
<td>12.91</td>
<td>12.50/13.75/14.50</td>
</tr>
<tr>
<td>2008</td>
<td>14.56</td>
<td>14.50/18.00</td>
</tr>
<tr>
<td>2009</td>
<td>15.60</td>
<td>16.50</td>
</tr>
<tr>
<td>2010</td>
<td>15.43</td>
<td>16.50/17.00</td>
</tr>
<tr>
<td>2011</td>
<td>15.73</td>
<td>18.00</td>
</tr>
<tr>
<td>2012</td>
<td>16.88</td>
<td>18.00</td>
</tr>
</tbody>
</table>

*Source: OAE*
<table>
<thead>
<tr>
<th>Year</th>
<th>Imported values</th>
<th>Exported values</th>
<th>Trade Balance</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>339.089</td>
<td>124.287</td>
<td>-214.802</td>
</tr>
<tr>
<td>2006</td>
<td>343.092</td>
<td>108.731</td>
<td>-234.361</td>
</tr>
<tr>
<td>2007</td>
<td>464.071</td>
<td>131.062</td>
<td>-333.008</td>
</tr>
<tr>
<td>2008</td>
<td>536.463</td>
<td>134.910</td>
<td>-401.553</td>
</tr>
<tr>
<td>2009</td>
<td>270.943</td>
<td>127.492</td>
<td>-143.451</td>
</tr>
<tr>
<td>2010</td>
<td>457.645</td>
<td>139.720</td>
<td>-317.925</td>
</tr>
<tr>
<td>2011</td>
<td>558.151</td>
<td>161.454</td>
<td>-396.697</td>
</tr>
<tr>
<td>2012</td>
<td>616.515</td>
<td>139.330</td>
<td>-477.185</td>
</tr>
</tbody>
</table>

Values: Million $ US.

Source: Thai Customs
On 2010, Thailand imported dairy product from

- New Zealand: 39%
- U.S.A.: 18%
- Australia: 12%
- Other: 11%
- Netherland: 7%
- France: 7%
- Germany: 3%
- Czech: 3%

Source: Thai Customs
<table>
<thead>
<tr>
<th>Dairy Product</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skimmed Milk Powder</td>
<td>56,940</td>
<td>60,666</td>
<td>50,117</td>
<td>59,357</td>
</tr>
<tr>
<td>Whole Milk Powder</td>
<td>24,450</td>
<td>17,442</td>
<td>16,577</td>
<td>26,529</td>
</tr>
<tr>
<td>Whey</td>
<td>24,802</td>
<td>19,311</td>
<td>15,821</td>
<td>26,534</td>
</tr>
</tbody>
</table>

Quantity: ton

Source: Thai Customs
# Main Exported Dairy Product

<table>
<thead>
<tr>
<th>Dairy Product</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Condensed Milk</td>
<td>5,045</td>
<td>4,008</td>
<td>3,672</td>
</tr>
<tr>
<td>2. Sweetened Condensed Milk</td>
<td>24,128</td>
<td>22,319</td>
<td>16,998</td>
</tr>
<tr>
<td>3. Milk and cream not concentrated (fat content 1-6%)</td>
<td>23,941</td>
<td>18,978</td>
<td>14,663</td>
</tr>
</tbody>
</table>

*Source: Thai Customs*
On 2010, Thailand exported dairy products to...

- SINGAPORE: 19%
- CAMBODIA: 31%
- PHILIPPINES: 18%
- MYANMAR: 8%
- LAOS: 7%
- MALAYSIA: 5%
- HONG KONG: 4%
- INDONESIA: 3%
- VIETNAM: 2%

Other: 3%

Source: Thai Customs
GAP (DLD) 
- Dairy Farm
  - 20,645 Dairy Farmers
  - 560,659 Dairy Cows
  - 243,089 Milking Cows
  - 2,750 Ton/d milk prod.

GMP (DLD) 
- Milk Collecting Center
  - 103 Cooperative
  - 72 Private
  - 9 Education

GMP (FDA) 
- Milk Processing Plant
  - UHT Plant 16
  - Pasteurized Plant 68

Lab 
- Milk Grading
  - A B C D
  - Penalty
    - Adding water 20 times
    - Finding Antibiotic 60 times

Regional Livestock Office

Price adjustment to milk quality

- Raw milk price 18.00 baht/kg at factory gate
- Penalty
  - Freezing point > -0.520 °C
  - White blood cells > 500,000 cell/cc.
  - Bacteria > 500,000 col/cc.
  - TS < 12 %
1. Genetic Improvement

Issues and Problem

- Purebred HF resulting in problem of Low conception rate and short Lactation Period.
- Milk production < 4,000 kg/hd/lac

Current approaches for solutions

- Used upgrading natives cows with purebred HF (use AI)
- DLD has produced crossbreed Tropical HF contain 82.5 – 93.75 % HF
2. Research and extension of livestock

**Issues and Problem**

- Some technology is not suitable for them or requires high capital investment incurring in high cost of production.

**Current approaches for solutions**

- Has introduced demonstrated farm model for technology transfer to encourage farmers’ participation for new technology embedding.
3. Farmers’ group related to livestock

Issues and Problem

- Small scale holder, form for away to market.
- They have insufficient capital to improve their farm management and conduct their own cooperatives

Current approaches for solutions

- Government provides funding to help manage dairy cooperatives and support its members. (Soft loan: low interest rate and long term payment)
4. Cattle management

**Issues and Problem**

- Not enough area to grow pasture or roughages.
- Poor reproductive performance.

**Current approaches for solutions**

- Contract farming between pasture groups and livestock groups.
- Supplement legume added such as leucaena.
5. Utilization of local resources as feed

**Issues and Problem**

- In dry season, it lacks of pasture. Most of farmers use rice straw to feed cattle

**Current approaches for solutions**

- Contract farming for raw material feed from nearby factories such as: pineapple shell, corn stem, cassava shell and palm cake
- Silage to preserve feed

Soybean meal + Waste beer + Cassava
6. Health and hygiene management

Issues and Problem

- 20 – 25% dairy cows are culled due to poor reproductive performance or other health problems

Current approaches for solutions

- Record herd analysis is important to profitable dairying or other milk production record system is recommended.
7. Utilization of animal by-products

Issues and Problem

- Smell and waste water from farms
- In the past, livestock communities were far away from the cities have expanded.

Current approaches for solutions

- Utilize manure from farms to produce biogas and fertilizer to decrease smell and waste water
8. Quality control of animal products

Issues and Problem

- Every milk delivery is inspected with regard to certain quality parameter

Current approaches for solutions

- Farmer has to check the cow for abnormal milk before starting to milk the cow
- Cooperatives establish the standard for controlling raw milk quality by cutting down the price of low quality products or rejecting products and at the same time increasing price for higher quality products
9. Processing of animal products

**Issues and Problem**

- Milk production in 2011 was 2750 tons per day
  - 97% producing of ready to drink milk
  - 2.8% was used for cheese production
  - 0.2% was distributed for sales in villages

**Current approaches for solutions**

- More research and development on new kinds of dairy products
10. Marketing of animal product

Issues and Problem

- Most of farmers sell their primary product to local milk collecting center
- Farmers get a little profit and cannot complete with other brands in the market

Current approaches for solutions

- Promoting dairy products totally produced from fresh milk as high quality product for health
- Increase domestic milk consumption
- Establish local brands (dairy cooperative brand) and sell processed milk directly to local consumers.
- Balancing of demand and supply of raw milk to avoid over production problems
**Vision**

1. Research and development on dairy farming
2. Develop and enhance dairy breeding for enhancing production efficiency
3. Promote milk consumption and develop milk product for competition
4. Increase efficiency of dairy farmer organization

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**Strategy**

1. Research and development on dairy farming
2. Improve dairy breeding for enhancing production efficiency
3. Reduce cost of dairy production
4. Promote milk consumption and develop milk product for competition
5. Increase efficiency of dairy farmer organization
6. Improve database system

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**Mission**

1. Increase milk yield from 12 kg to 15 kg/cow/day
2. Technology transfer to 20,000 farmers
3. Milk quality meet good standard criteria at least 80%
4. Reduce cost for increasing profit at least 10%
5. Increase milk consumption from 14 liters to 20 liters/person/year

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**Goal**

1. Increase milk yield from 12 kg to 15 kg/cow/day
2. Teach technology to 20,000 farmers
3. Milk quality meet good standard criteria at least 80%
4. Reduce cost for increasing profit at least 10%
5. Increase milk consumption from 14 liters to 20 liters/person/year

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**KPI**

<table>
<thead>
<tr>
<th>KPI I</th>
<th>KPI II</th>
<th>KPI III</th>
<th>KPI IV</th>
<th>KPI V</th>
<th>KPI VI</th>
</tr>
</thead>
<tbody>
<tr>
<td>% Good Agricultural Practice (GAP) farmers</td>
<td>% processed milk that increasing each year</td>
<td>% milk consumption in country that increasing each year</td>
<td>% increasing farm profit</td>
<td>% export product that increasing each year</td>
<td>6. Establish Dairy Board Office in 2016</td>
</tr>
</tbody>
</table>

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**Strength of farmers for good future of dairy industry**
Thank you for your attention