

# WARRICKresearch

## World Markets for Aseptic Packaging / Report Extracts

### a / Processing of Particulates

In aseptic processing of particulates the key requirement is to provide a microbiologically safe process without over-processing a significant portion of the product. Safety requires effective sterilisation of the centre of the largest particles. Achieving sterility is dependent on the heat transfer system from liquid to particles, and the length of time the product is heated.

In practice, the heat transfer characteristics of virtually all products are unique (even if similar). Trials therefore need to be conducted for each product variation to establish the time/temperature profile that will provide sterility and optimum product quality ( taste, colour, nutritional value, texture ) Development work is therefore expensive, and with low acid products great care is needed to ensure products are fully sterile.

b / The Asian region includes countries with widely varying levels of economic development. In the more developed markets such as Korea and Taiwan there are well established large markets for packaged beverages, most milk products are stored in the chill cabinet and there is little use of uht products. In most other countries there is little chilled distribution and most products are uht, with in-pack sterilisation also used.

In most countries, portion packs dominate the market. This is partly for economic reasons and also because milk is purchased as a drink rather than as an ingredient.

There is a large market for fermented milk in Taiwan and Thailand, where it accounts for over 30% of total milk consumption. There is also a large market for flavoured milk, accounting for c. 20% of total milk consumption in the region.

The table shows milk consumption for 1999 and 2003, and forecasts for 2007. (The figures include flavoured and fermented milk)

|            | 1993 |      | 2003 |      | 2007 |      | Mn Litres Trend<br>(UHT 03-07) |
|------------|------|------|------|------|------|------|--------------------------------|
| Korea (1)  | 130  | 1790 | 225  | 1940 | 275  | 2030 | Inc 5% p.a.                    |
| Taiwan (2) | 110  | 520  | 126  | 542  | 124  | 530  | Stable                         |
| Thailand   | 710  | 1090 | 1006 | 1560 | 1240 | 1840 | Inc 5% p.a.                    |
|            | 38   | 65   | 64   | 120  | 120  | 210  | Inc 17% p.a.                   |

### c / Harbin Saide Hi-Tech Co - China

[www.saidepack.ebigchia.com](http://www.saidepack.ebigchia.com)

Tel: 451 843 8412

Harbin is a large Chinese manufacturer of processing equipment - both uht and pasteurising plant. The company also makes pouch filling equipment, and in the past 2 years has developed an aseptic pouch filler in response to rapidly growing demand from the dairy industry - one of several Chinese companies to enter this market. The machine is designed for smaller suppliers, filling portion packs at 5000pph.

#### d / The Use of Aseptic Packaging - Mn Litres and Mn Packs

In 2003 over 1300mn litres of product was aseptically packed.

| Pack            | 99   | 03   | 07   | % inc p.a. |        | Trend<br>(Mn Litres) |
|-----------------|------|------|------|------------|--------|----------------------|
|                 |      |      |      | 99-03      | 03--07 |                      |
| Cartons         |      |      |      |            |        |                      |
| - 1 litre +     | 635  | 771  | 780  |            |        |                      |
| - 200-250ml     | 110  | 143  | 144  |            |        |                      |
| Total           | 745  | 914  | 924  | 5          | < 1    | No increase          |
| Plastic bottles | 280  | 425  | 525  | 11         | 6      | Inc market share     |
| Bag in box      | -    | 10   | 25   |            | 20+    | New product          |
| <b>TOTAL</b>    | 1025 | 1349 | 1474 | 7          | 2      |                      |

#### e / Output per Filling Line

Few companies attempt to operate their facilities 24 hours per day and 7 days per week. For most companies, maximum operational hours will be:

Summer 16-20 hours per day for 6 or 7 days per week

Winter 8-16 hours per day for 5 or 6 days per week

From their weekly total operational hours, filler companies will typically obtain 60-70% of their nominal system output. The other 30-40% of operating time will be used for scheduled stoppages (changeovers, maintenance) unscheduled stoppages, and downtime due to lack of demand. Thus if a line operates at 10000 bph, and the company operates for 100 hours per week, average output will be 600,000 - 700,000 packs per week.