TABLET DETERGENTS
Towards A More Sustainable Future

Unilever

THE CONTRIBUTION OF TABLETS

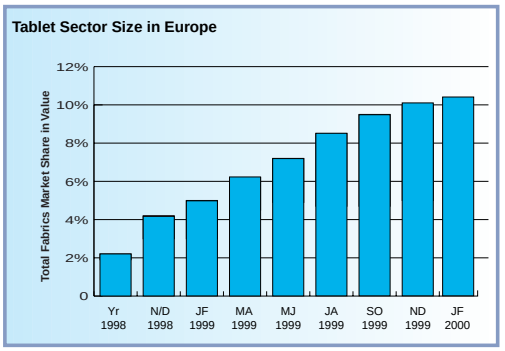
Unilever is committed to meeting the needs of customers and consumers in an environmentally sound and sustainable manner, through continuous improvement in environmental performance in all our activities.

We have made a lot of progress in improving environmental performance throughout our supply chain, from raw materials consumption through manufacturing to distribution and packaging. And we will continue to do so. But we know that most of the potential impact from our products is outside our direct control - when our raw materials are produced and when consumers use and dispose of our products.

Unilever recognises it has a responsibility to work with others to minimise these impacts, and we are doing so. It has led us to become actively involved in the global debate on sustainability, and in awareness-building initiatives in our industry and in the communities where we operate. It is a huge ongoing challenge, and there are no easy answers.

In the case of detergents, though, one thing is clear: if we can influence how consumers wash their clothes, we can make real progress towards a more sustainable way of life in Europe. The introduction of Tablet detergents is helping us to do just that.

Detergent Tablets, introduced as a new format by Unilever in 1998, have been an enormous success and have already had a very positive impact on the environment. We have no doubt that this new format represents an opportunity for the industry to make further major contributions towards the sustainable consumption of detergents.



Tablets' ability to deliver improved environmental performance can be assessed in three areas:

- **change of consumer behaviour**
- **less chemical disposal in the environment**
- **improved Life Cycle Assessment indicators**

It is the potential to influence consumer behaviour that makes Tablets a breakthrough format with real power to deliver sustainability benefits. We will, of course, continue to strive for improved environmental performance in all three areas, with this and our other detergent formats.

A POSITIVE CHANGE IN CONSUMER BEHAVIOUR

The industry increasingly recognises its responsibility both to introduce new, cleaner technologies and products, and to encourage consumer behaviour that will result in a lower environmental impact. This is the motivation for much of the work of the industry association, the AISE (Association Internationale de la Savonnerie, de la Détergence et des Produits d'Entretien), notably its Code of Good Environmental Practice.

But the strongest sustainability advances happen when there is a good synergy between product benefits and evolving consumer habits. Finding that synergy - and maximising it - is what we in the industry increasingly need to strive for.

In the mid-1970s it was the introduction of TAED - for low temperature bleaching - that yielded this synergy. The new technology reassured European consumers that they could turn their wash temperatures down by 30-40C without loss of performance, thus significantly reducing the amount of energy consumed by households.

Today, Tablets deliver that synergy too and show the potential to keep on doing so for some time to come.

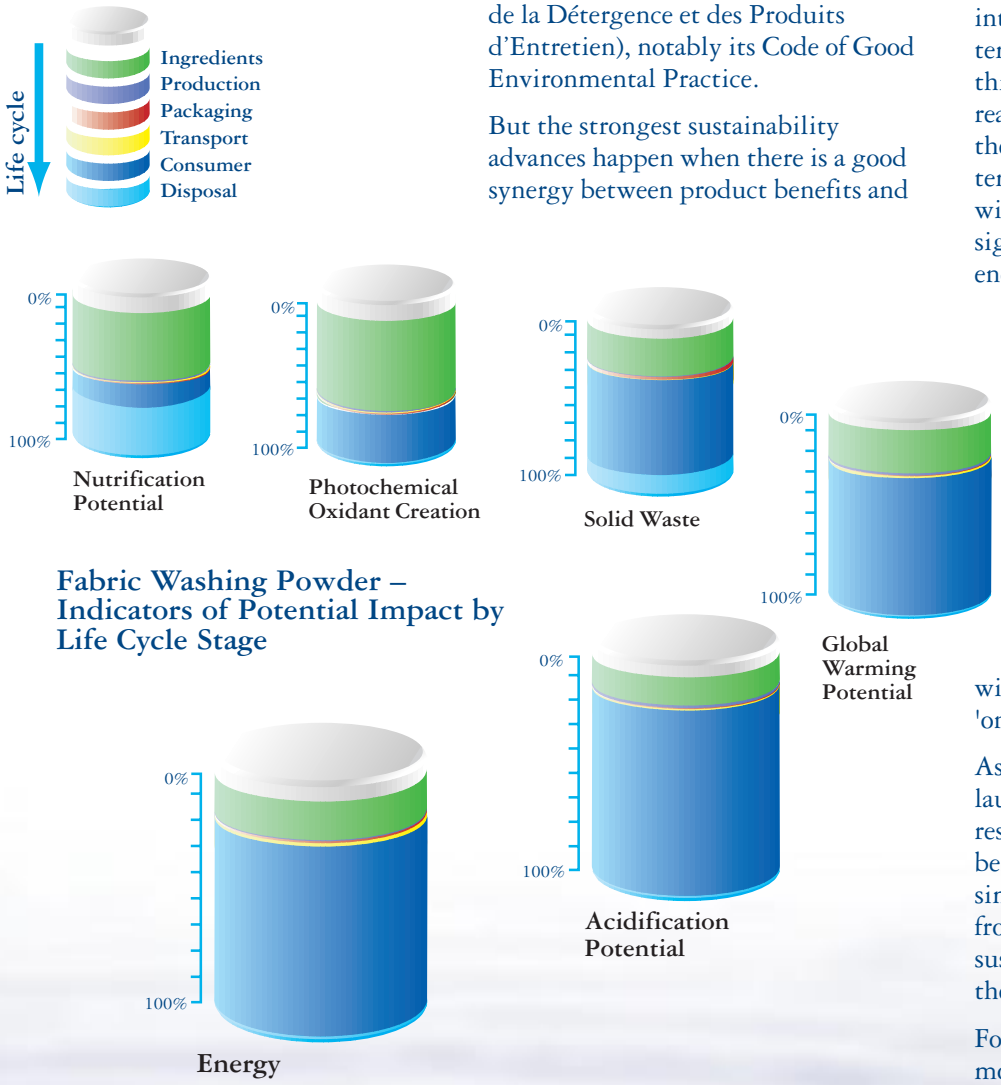
The beauty of the Tablet format is that it satisfies consumers' need for convenience while at the same time offering more certainty in dosage for optimum results. Tablets enable consumers to replace the tendency to add 'a-little-bit-extra-to-be-sure-of-a-good-result' with the simple formula of just 'one-or-two-tablets'.

As more consumers are reassured that laundry Tablets really do deliver the results they want - as well as other benefits like value, convenience and simplicity - we are creating a platform from which we can launch further sustainability improvements onto the market.

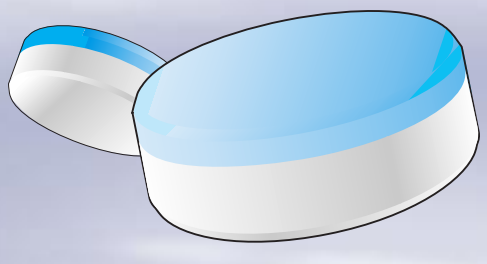
For example, we could introduce more multifunctional ingredients, which reduce the total amount of chemicals needed per wash: consumers would still use one or two tablets, but of a product with a further improved sustainability profile.

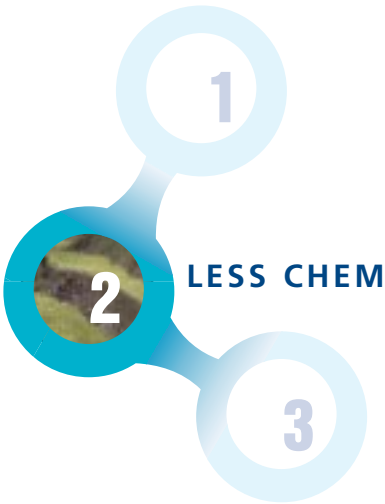
ENVIRONMENTAL BREAKTHROUGHS IN LAUNDRY DETERGENTS

- 1975: TAED - a new ingredient - delivers same performance at lower temperatures, reducing energy consumption
- 1990: Concentrate powders - use less ingredients and packaging materials and deliver the same performance
- 1992: refill packs - enable a 40% reduction in packaging materials
- 1998: Tablets - control and reduce the amount of detergent consumed per wash while delivering equal cleaning and care performance

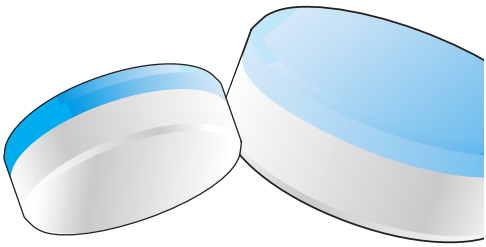


Fabric Washing Powder – Indicators of Potential Impact by Life Cycle Stage





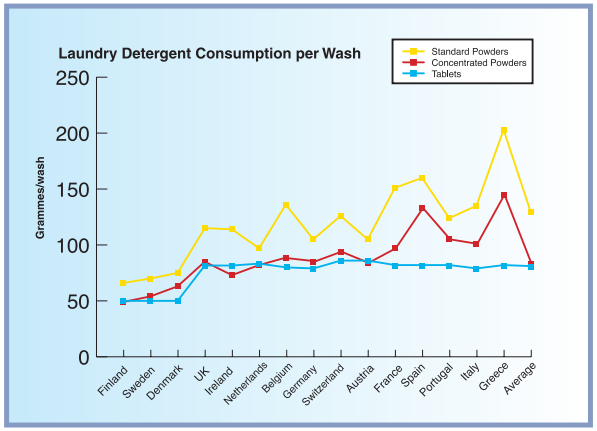
LESS CHEMICAL MATERIAL



Tablets enable controlled lower dosage of detergents per wash: controlled, because of the format; lower, because they inhibit the tendency to add-a-little-bit-extra.

The immediate and major benefit of tablets has been a 53,000 tonne reduction in chemical disposal into the environment in 1999. In fact, the environmental benefits of tablets are threefold:

- reduced chemical disposal
- reduced disposal of poorly biodegradable materials
- reduced packaging consumption

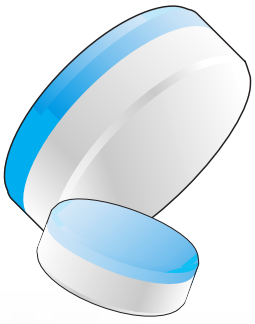


DETERGENT CONSUMPTION

AISE Target: 10% reduction in detergent consumption per capita by 2002.

Tablets have already resulted in a reduction in chemical disposal into the environment of over 50,000 tonnes, but the potential saving in detergent consumption is even higher.

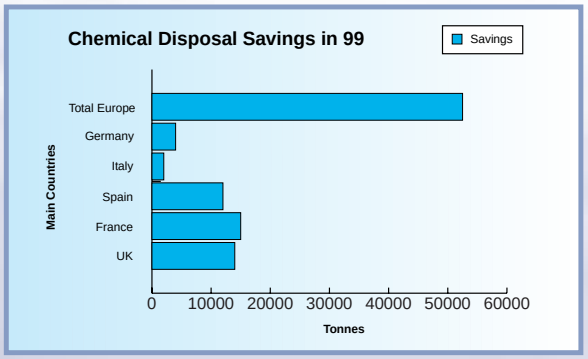
As we expect the sector to grow to 20-25% in the next few years, we estimate an annual saving in detergent consumption vs the pre-tablet position of 125,000 tonnes - assuming we maintain our current sector share. The saving for the total European Detergents Industry would be over 250,000 tonnes per year.



POORLY BIODEGRADABLE MATERIAL

AISE Target: 10% decrease in the consumption per capita of the organic ingredients of household laundry detergents which are not inherently biodegradable by 2002.

Poorly biodegradable organics are carbon compounds that potentially stay in the environment longer than the accepted standard, which is that they should biodegrade by more than 70% in 28 days.



(This is based on a standard test in which poor biodegradebility does not necessarily mean that the chemical persists in the environment. In reality, many organics classed as poorly biodegradeable will biodegrade because of other mechanisms available in the natural ecosystem which can help to break down carbon compounds.)

The AISE has targeted poorly biodegradable organics for reduction because, even though they may have no particular toxic properties, current concepts of sustainability dictate that we aim to leave future generations an environment that has suffered minimum modification.

Here, too, Tablets are delivering improvements: in 1999, Tablets generated savings totalling more than 400 tonnes of poorly biodegradable materials across Europe.

PACKAGING CONSUMPTION

AISE Target: 10% reduction in packaging consumption per capita by 2002.

Packaging materials are essential to maintain the quality and integrity of our detergent products to ensure they provide the performance consumers expect. However packaging also contributes to the environmental burden of our products. Although the real contribution to the total waste stream is small (typically <5%), it is a higher proportion of household waste. It is very visible, contributing to the concerns of consumers, opinion formers and legislators. Hence Unilever and the AISE have been working to reduce the amount of packaging used with our products.

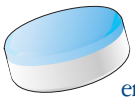
The introduction of the Tablet format has resulted in a reduction of the packaging material required on a per wash basis from an overall average of 7 grammes per wash for our other detergent products to 5.2 grammes per wash for the tablet format - an average 26% reduction in packaging material per wash.

LIFE CYCLE ASSESSMENT

Significant Improvement
Significant Worsening
No Change

Lever Tablets vs Lever Powders/ Country	Global Warming Potential	Acidification Potential	Photochemical Oxidant Creation Potential	Nutrification Potential	Solid Waste	Energy
Sweden				n/a*		
Norway						
UK						
Ireland						
Netherlands						
Belgium						
Germany						
Switzerland						
Austria						
France						
Spain						
Portugal						
Italy						
Greece						

(*Not applicable as there are high levels of tertiary wastewater treatment systems throughout the country.)



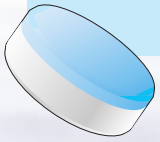
Life Cycle Assessment (LCA) is an environmental management tool for evaluating the potential effects that a product has on the environment over its entire life cycle - from the extraction and processing of raw materials, through its manufacturing, packaging and distribution, to consumer use and eventual disposal. Unilever has used LCA for a number of years to assess the overall potential environmental impact of the product systems we market and to place our activities in context with the total supply chain. It also helps us to highlight areas when we can further improve.

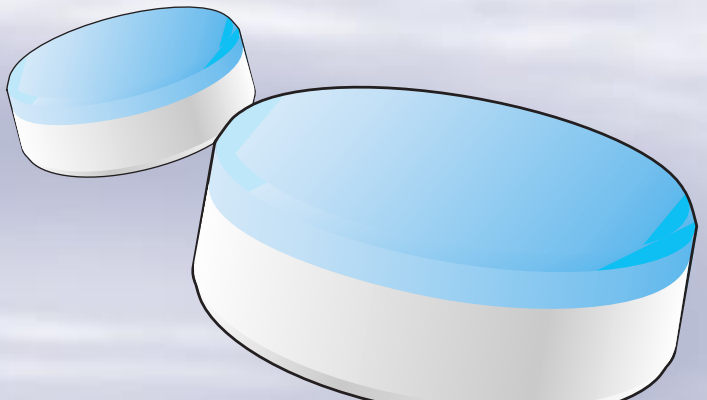
LCA methodology was applied across a number of European countries to assess the effects of replacing the current major powders with Tablets. The habitual, per wash, powders dose was compared with a dose of two tablets.

Life Cycle Assessment shows that a shift from use of powder detergents to Tablets generates much more significant improvements in the selected environmental performance indicators than weaknesses.

ENVIRONMENTAL INDICATORS USED IN LCA

- **Global Warming Potential** - Emissions of greenhouse gases are leading to an increased absorption of radiation emitted by the earth resulting in global warming. Contributing emissions include carbon dioxide, methane and nitrous oxide and are expressed in terms of carbon dioxide equivalence.
- **Acidification Potential** - Acid deposition on soil and water can lead to detrimental effects on both flora and fauna. The acidifying emissions are the oxides of sulphur and nitrogen oxides that result from fuel combustion processes.
- **Photochemical Oxidant Creation Potential** - Low-level smog is formed by the reaction of nitrogen oxides and volatile organic compounds (VOCs) under the influence of UV light. Contributing emission sources include the manufacture of plastic packaging materials and the combustion of natural gas.
- **Nutrification Potential** - The emission of nutrients can lead to increases in biomass production. In water this can lead to algal blooms resulting in oxygen depletion that affects higher species such as fish. Undesirable shifts in numbers of species can also occur resulting in a threat to biodiversity. Contributing emissions from the detergent life cycle are phosphate, and biodegradable materials.
- **Solid Waste** - the sum of all the sources of solid waste over the product life cycle. The primary sources are from mineral-based raw material sourcing, solid fuel combustion and packaging materials.
- **Energy** - the total amount of primary fuel reserves extracted from the earth taking into account the efficiency of electricity generation and heat producing processes. This indicator is a basic measure of resource depletion but is also useful as other indicators are related to energy and the examination of the energy profile can give valuable insights into environmental performance in general.





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