

## HOUSEHOLD PRODUCT TESTING

*Household products include bleaches, toilet blocks, washing-up liquids, soap powders and liquids, fabric conditioners, window, oven, floor, bathroom, kitchen and carpet cleaners, dishwasher detergents and rinse aids, water-softening agents, descalers, stain removers, polishes, paints, paint removers, glues, solvents, varnishes, air fresheners, moth balls and insecticides. Animals may be used in the toxicity testing of any of these products or their ingredients all over the world.*

### Number of animals used

The number of animal experiments conducted in the UK alone for Household Product purposes fluctuates each year. In 2002 however there was a disturbing increase from the previous year of 75% in experiments testing household products and ingredients. Over one thousand animals were used in these kind of tests in 2002 to assess the toxicology and 'safety' of the substance or product. These tests involved skin irritation or sensitisation, eye irritation and other tests which involved poisoning the animal to its death (lethal methods). Animals used in 2002 were guinea pigs, rats, mice, rabbits and fish<sup>1</sup>. In previous years, dogs have also been used in such tests.

New ingredients for household products are constantly being developed and tested on animals. For example, in recent years new enzymes (to digest stains) and 'optical brighteners' (which make washing appear whiter) have been developed for use in washing powders and liquids. New surfactants (which cut through grease to remove ingrained dirt) and chemical 'builders' (which act as water softeners and enable surfactants to work more effectively) have been developed for use in washing powders and liquids, washing-up liquids and various cleaning agents.

Companies that test their household products on animals include Procter and Gamble, Unilever,

Reckitt Benckiser, Colgate-Palmolive and SC. Johnson. Familiar brand names are Domestos, Parazone, Ajax, Jif, Mr Muscle, Flash, Mr Sheen, Fairy, Ariel and Dettol.

### The legal situation in the UK

Animal testing for household products is not a legal requirement in the UK. Before granting a licence to test on animals, the government is supposed to perform what is called the 'cost/benefit' test. This involves weighing the animal suffering which the test is likely to cause against the likely benefit of the research. According to UK law, a licence should only be granted if it is concluded that animal suffering is outweighed by benefit<sup>2</sup>.

In practice it is obvious that the 'cost/benefit' test is virtually meaningless. In 1997/1998 the Labour government stopped licensing cosmetic tests on animals on the grounds that the suffering they caused was not justified given the trivial nature of the products tested. In 1997 it stated that it would also 'explore the feasibility' of a ban on testing finished household products on animals<sup>3</sup>.

The BUAV believes that the arguments in favour of a ban on household product testing mirror very closely those for a ban on testing for cosmetics. It is not essential that new household products are developed – if this can only be done through inflicting pain and suffering on animals (which the

BUAV strongly refutes), society should do without. In other words, the cost/benefit test cannot possibly be met for household products for the same reasons that the government concluded it was not met for cosmetics. We therefore believe that the government should immediately ban household product testing on animals. Manufacturers should use a combination of existing ingredients (which are already established as safe) and available non-animal test methods to produce their products.

### **The animal tests**

#### **1. Ingredient testing**

If a company wishes to use a new chemical (ingredient) in its household products, it may in practice feel it has to carry out a whole battery of animal tests. However, this is not because EU law requires this, as is often claimed.

European legislation requires that for new chemicals a detailed range of information is available, including information on their safety for human use. The standard testing requirements are described in guidelines associated with the EU legislation. The guidelines are updated from time to time to reflect current thinking on how to test for chemical safety. To assess a chemical's potential to harm humans, the methods described in the guidelines include many animal tests. If a company wants to introduce a new chemical without conducting one or more of these animal tests, it has to demonstrate to European or national regulators that it has obtained the same data in another valid way.

However national regulatory authorities (responsible for granting a licence to market the end product based on the safety & efficacy data submitted by the manufacturer) still tend to insist on animal, largely out of habit and partly to protect companies from product liability claims, despite the fact that in the majority of cases they are only listed as guidelines and not as an obligatory part of the process.

For the same reasons companies sometimes choose to carry out animal tests even if the relevant authority does not require it. Annex V of the EU Dangerous Substances Directive (67/548/EEC) lists the following kinds of animal tests: LD50 type tests,

the Draize eye test, skin irritancy tests, and additional tests for chemicals produced in larger volumes. However it does not say that they must be carried out - safety data is required, but it does not dictate that this data must be acquired via these animal tests and it acknowledges that there may be another way of getting the desired information.

#### **The LD50 (Lethal Dose 50) test**

The notorious oral LD50 test was phased out of international Organisation for Economic Cooperation and Development (OECD) guidelines in December 2002. This test involved taking groups of animals and force-feeding them with a test substance in order to find out the dose that killed half of them. No pain relief was normally given.

Sadly however the LC50 test where animals are forced to inhale substances to find out the dose which kills half of them and the LD50 test via the skin route are still included in the guidelines. Refinements of the oral LD50 test which use less animals have been introduced but these tests still involve force-feeding animals with chemicals. They are stated as supposedly causing less suffering as they are ended before the animals die of poisoning.

#### **The Draize eye test**

In this test, chemicals are dripped into the eyes of conscious rabbits who may be held in stocks for this purpose. Rabbits have less tear flow than humans and therefore cannot effectively wash painful substances from their eyes. The animals' eyes are examined for signs of damage, usually over a period of seven days. No pain relief is normally given.

#### **Skin irritancy test**

Groups of animals, usually rabbits or guinea pigs have their backs shaved. A test substance is applied. The animals are wrapped in plaster to prevent them licking the test area. They are examined for a period of one or two weeks for signs of redness, swelling, inflammation, cracking and ulceration of the skin. No pain relief is normally given.

In addition, skin sensitisation tests; repeat-dose toxicity tests and mutagenicity tests (short-term tests for genetic damage) must also be carried out.

### Additional tests for chemicals produced in larger volumes

Animal tests which are often used for chemicals produced in larger volumes include

- The 90-day repeat-dose test (by mouth, inhalation or skin) in rodents. This test involves 30-80 rats, rabbits or guinea-pigs;
- The 90-day repeat-dose test (by mouth) in non-rodents. Dogs are normally used in this test;
- The teratogenicity test (for birth defects). This test involves at least 80 rats, mice, hamsters or rabbits;
- The chronic toxicity test. This test involves a minimum of 160 rats, who are given daily doses for most of their lifespan;
- The carcinogenicity test. This is a lifetime study usually in 400-500 rodents;
- The one and two-generation reproduction toxicity test. This test involves more than 100 rats or mice;
- The test for embryonic or foetal genetic damage. This test involves 10-60 rats, hamsters or mice and their offspring;
- The toxicokinetic study. This test involves eight to ten animals 'of an appropriate species' to study absorption, metabolism, distribution and excretion of the substance.

## 2. Finished product testing

Similarly, animal tests for finished products are not mandated by EU legislation. Rather, toxicity of the product is normally assessed on the basis of the toxicity of the ingredients and their concentration. However, these calculations are considered by some manufacturers to be rather crude and to over-estimate product toxicity. Companies may therefore choose to do animal tests on the finished product in order to achieve a less toxic label.

## Animal tests – who does what?

### Procter and Gamble

(a consumer product company)

- A synthetic musk (these are used widely to perfume household products, cosmetics and toiletries) was tested in 71 mice. They were dosed daily by a tube into the stomach with different amounts of the test substance for seven days. The researchers concluded that the musk may cause liver tumours in mice, but that there was no risk to humans because they are exposed to much lower levels of the fragrance, and because *species differences make the results of the animal test inapplicable to humans*.<sup>4</sup>
- Chronic toxicity and carcinogenicity tests of sodium aluminium silicate (a 'builder' in washing powders) in rats;
- LD50 test of sodium alkylbenzene sulphonate (a chemical used in washing powders and liquids and in household cleaners) in rats,
- Acute toxicity test (by mouth) of diethylene hexyl ether (a chemical used in cleaning products) in dogs;
- Chronic toxicity and carcinogenicity tests of a red colouring agent in mice;

Chronic toxicity and carcinogenicity tests of an orange colouring agent in rats<sup>5</sup>

### Union Carbide Corporation, USA

(a chemical company)<sup>6</sup>

- Acute toxicity, skin irritation and eye irritation tests of hexyl carbitol (a chemical used in cleaning products) were carried out on rats and rabbits. This chemical was known in 1981-2 to be a severe eye irritant causing corneal injury.

### Inveresk Research International, UK

(a contract testing laboratory)<sup>7</sup>

- Tests for oral toxicity, inhalation toxicity, skin and eye irritation and skin sensitisation were carried out on an enzyme to be used in detergents.

### **Ciba-Geigy Corporation**

(a chemical company)<sup>8</sup>

- A teratogenicity test of a fluorescent whitener (for soap powders) was carried out in rabbits.

### **Anderson Laboratories, USA<sup>9</sup>**

- Tests were carried out on a commercial air freshener to see if it improved air quality or caused adverse health effects. Over 300 mice were divided into groups and forced to breathe different levels of emissions from the air freshener, for 60 minutes at a time. Within 10 minutes of exposure, the animals' breathing rate slowed by up to 80% at the highest doses, a reaction, which persisted for the duration of the exposure. The air freshener also caused lung irritation, toxicity to the nervous system and behavioural abnormalities including altered posture and gait, loss of balance, falling, tremors, paralysis and some deaths.

### **Conclusion**

There is a very large range of household products, many of which are excessively 'high-tech', containing chemical ingredients, which may be corrosive or otherwise highly toxic. Many of these products and ingredients are completely unnecessary, but innovation, and therefore animal testing, continues as companies fight to keep their place in the market.

There are already numerous brands of soap powders, surface cleaners, bleaches and similar products. More than 100 chemicals are commonly used in disinfectants, with 250 to choose from in total<sup>10</sup>. There is no need to test fluorescent whiteners on animals, because clothes do not need to look fluorescent white. Perfumes and colourings serve no useful purpose in a household product – indeed, fragrances are a major cause of skin allergies.

Animals must not be made to suffer for unnecessary high-tech products.

***For more information on the animal testing policies of household products companies and***

***the BUAV's Humane Household Products Standard please see our Dirty Secrets fact sheet***

<sup>1</sup> Home Office, (2003), Statistics of scientific procedures on living animals, Great Britain – 2002.

<sup>2</sup> Section 5(4) Animals (Scientific Procedures) Act 1986.

<sup>3</sup> Supplementary note to the Home Secretary's response to the Animal Procedures Committee interim report on the review of the operation of the Animals (Scientific Procedures) Act 1986.

<sup>4</sup> Stuard, Caudill and Lehman-McKeeman (1997). Characterization of the effects of musk ketone on mouse hepatic cytochrome P450 enzymes. *Fund. & Appl. Toxicol.* 40:264-271.

<sup>5</sup> Details taken from documents submitted to the US Environment Protection Agency in the early 1990s, under the Toxic Substances Control Act.

<sup>6</sup> Details taken from documents submitted to the US Environmental Protection Agency in 1992, under the Toxic Substances Control Act.

<sup>7</sup> Greenough et al (1996). *Food & Chem. Toxicol.* 34:161-166.

<sup>8</sup> Details taken from documents submitted to the US Environment Protection Agency in 1992, under the Toxic Substances Control Act.

<sup>9</sup> Anderson & Anderson (1997). Toxic effects of air freshener emissions. *Arch. Environ. Health.* 52:433-441.

<sup>10</sup> Jeffrey (1995). *Rev. Sci. Tech.* 14:57-74.

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