LD50: A Cruel Waste of Animals
Imagine a test in which up to 100 animals are forced to consume a toxic substance in an amount high enough to kill half of them. Then imagine that the explicit purpose of the test is to kill those animals. Incredibly, such a test not only exists but each year also claims the lives of from two to four million animals.

The test is the lethal dose 50, or LD50 as it’s commonly called. Its purpose is to measure the toxicity of a substance by determining how much of that substance will kill half of a group of some 60-100 test animals in a specific amount of time.

The HSUS believes that inducing untold suffering in animals in order to provide questionable data can no longer be tolerated. Here in Washington, D.C., we are spearheading a drive supported by hundreds of animal-welfare groups across the country to force the federal government to call a halt to this unconscionable activity.

The LD50 was developed in 1927 for the purpose of standardizing new batches of drugs to make sure that what was a safe dose from one batch would not be an unsafe one from the next batch. Over the years, however, use of the test has been broadened to the point where it has lost all its usefulness and become wasteful and arbitrary. For instance, one scientist actually used the test to find out the LD50 level of distilled water!

More and more scientists, however, are stepping forward to decry this test, once described by one consultant toxicologist for the World Health Organization as “a ritual mass execution of animals.” What tests we do need, they say, should measure the safe doses of substances rather than the fatal ones. Yet many federal agencies still require that this death test be performed before new substances may be marketed or transported across state lines.

While it is important for scientists to know how poisonous certain substances are, it is of little use to them to know the exact amount of a dishwashing detergent needed to kill half of a group of 100 rats. Late last year, the Pharmaceutical Manufacturers Association (PMA) called for the government to change its regulations to elimi-
nate the test from its requirements.

"As part of a battery of studies, the classical LD50 test which utilizes many animals to determine an LD50 value with mathematical precision lacks justification," the PMA stated.

The HSUS is calling for a two-step process for abolishing the LD50. First, we are calling on industry and the federal government to replace the LD50 immediately with a test for "approximate lethal dose" of a test substance. This would in and of itself reduce the number of animals used by up to 90 percent. At the same time, we are urging that a non-animal alternative be developed to replace animals in toxicity testing altogether. It will take immense public pressure to bring these changes about.

It was such public pressure in 1980 and 1981 that forced cosmetic companies to seek safer alternatives to animal testing. After millions of dollars of research money towards finding a non-animal replacement for the cruel and inaccurate Draize test, in which laboratory rabbits have substances forced into their sensitive eyes to gauge irritancy. We can be proud of our achievements in leading industry to recognize that it must work to do away with the cruel and inaccurate Draize test, of which the LD50 is a victim. At the same time, we are urging the FDA and the Department of Transportation to replace the LD50.

Among the federal agencies, only the Environmental Protection Agency (EPA) explicitly requires that LD50 values be provided for any new pesticide before it can be registered for sale. However, many other agencies, including the Consumer Product Safety Commission (CPSC), the Food and Drug Administration (FDA), and the Department of Transportation (DOT), while not actually demanding LD50's, do require explicit measures of toxicity—measures that in many cases can be met only by providing LD50 information. What's more, these federal agencies, despite scientific and industry pleas to end the need for LD50's, are refusing even to consider banning the test. A recent letter from a Department of Transportation official to The HSUS stated that "do not require determination of a precise LD50 or LD-50, only a determination as to whether a material has a toxicity at or below a certain breakpoint." On the other hand, he continued: "At present, it is our view that the benefits of using the LD50 as the benchmark criterion for declaring that material is a poison... far outweigh the concerns expressed about using live animal tests."

It is clear that extreme pressure, not only from industry groups, but from animal advocates and the general public, must be brought to bear on these federal agencies before they will cease to require, explicitly or implicitly, the LD50 test as the bench mark criterion of little use and are expensive in nature.

A better question would be, what's right with the LD50. Tens of thousands of laboratory animals suffer not for the purpose of safeguarding the public but to provide evidence of safety-testing for any company marketing a new substance in case somebody is injured by that substance and decides to sue. Even worse, the test itself is not scientifically valid. LD50 values may be affected by an animal's species and strain, age, sex, diet, the amount of food deprivation prior to dosing, the temperature, caging, season, and experimental procedures. Even if, somehow, all those factors could be neutralized, it would not change the fact that information obtained from the LD50 test cannot be used to determine scientifically how a substance will act in a human. For example, knowing that a substance has an LD50 value in rats of 122.4 units will enable a scientist to conclude only that the human lethal dose is somewhere between 12 and 1200 units of that same substance. First of all, the LD50 yields no information on the long-term effects a substance has in the body. And, as we have seen over and over again in the last few decades, it is the long-term exposure threat of most substances that poses the greatest risk to human health.

Thankfully, more and more scientists are realizing that there is no justification for a test whose sole purpose is to kill animals to produce information of dubious value. As long ago as 1969, one scientist noted that LD50 values "are of little use and are expensive in animals. The main information they give is an indication of the size of the dose required [for a human being] to commit suicide." In January of 1983, the government of West Germany recognized the idiocy of the LD50 and stated that it was prepared to reduce the number of animals required for the LD50 by 75 percent, sparing an estimated 130,000 animals annually, according to a report in The Economist magazine.

"It's beenfed laundry soap every day for the last six months, and it's made me sick. For some reason they find that remarkable."

In this country, shortly after the Pharmaceutical Manufacturers Association came out against the LD50, the National Society for Medical Research (NSMR) issued its own policy statement on the subject, stating that "the LD50 is determined by the NSMR is only the opinion of the NSMR that the routine use of the quantitative LD50 test is not now scientifically justified. Because differences do exist in the effects of drugs on different species of animals, or on newborn and mature individuals, it is more important to determine the exceptional LD50's, are refusing even to consider banning the test. A recent letter from a Department of Transportation official to The HSUS stated that its regulations "do not require determination of a precise LD50 or LD-50, only a determination as to whether a material has a toxicity at or below a certain breakpoint." On the other hand, he continued: "At present, it is our view that the benefits of using the LD50 as the benchmark criterion for declaring that material is a poison... far outweigh the concerns expressed about using live animal tests."

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seeking to ban the test. We have already contacted all the pertinent federal agencies requesting that they modify current regulations so as not to require the test. Should this not prove successful, we intend to file a formal petition proposing that they change their regulations and end the use of the LD50.

We are also helping to lead a coalition of animal-welfare groups in efforts to bring to the public the horrors of the LD50. It may take a full public revolt to convince government and industry that finding alternatives to the use and abuse of laboratory animals should be a major priority and that the LD50 is a particularly good candidate for the trash heap.

**WHAT YOU CAN DO**

It was pressure from millions of citizens just like you that helped us convince the cosmetics industry of the importance of seeking an alternative to the Draize test. You can be just as instrumental bringing an end to the cruel LD50. Here are a few things you can do:

- Write to President Reagan (c/o the White House, 1600 Pennsylvania Ave., NW, Washington, D.C. 20516). Tell him to direct the EPA, CPSC, FDA, DOT, and other agencies that require LD50 information to change their policies and forbid use of the test for their purposes. Explain that approximate lethal dose information is just as useful and would save the lives of millions of laboratory animals.

- Write your U.S. representative (c/o House Office Building, Washington, D.C. 20515) and your senators (c/o Senate Office Building, Washington, D.C. 20510). Urge them to actively support and vote for legislation that encourages the development of non-animal alternatives for research. Such legislation could foster the development of a substitute not only for the LD50 but also for thousands of other cruel and painful animal experiments that could be more cheaply and accurately performed without using animals.

- Try to avoid buying new products on the market. Unless the labels specifically say they were not tested on animals, all new consumer products, including many “new and improved” versions of old products, from toothpaste to oven cleaners, were tested at the expense of animal lives. Sticking with established products already on the market can cut down the need for LD50 tests until we have abolished them.

- Finally, help The HSUS help the animals. We are working not only to end the LD50 but also to find non-animal alternatives. Our work ranges from preventing shelter dogs and cats from becoming research subjects to ending the needless and cruel use of primates in the nation’s primate centers. Your tax-deductible contribution will help us continue our programs to alleviate the suffering not only of laboratory animals but of other animals as well. Please use the enclosed postage-paid envelope to send your gift today.

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