



Du Pont OUST Question and Answer Brochure

Pesticides are among the most rigorously tested products that are commercially marketed today. They rival human drugs for the extent of safety testing that is conducted before they reach the market. Tests are conducted to predict what types of effects these compounds could have on humans and the environment, and to determine the margin of safety associated with their use. If the margin of safety is not sufficient to protect human health or the environment, then the proposed uses either must be modified or the pesticides are not registered and cannot be marketed.

WHAT IS OUST®?

OUST is one of the newly developed family of herbicides, from Du Pont research, called sulfonylureas. Sulfonylurea herbicides are used at extremely low rates (grams per hectare) to control unwanted weeds. Conventional herbicides need to be applied at kilograms per hectare in order to be effective. The reason sulfonylureas are so effective at extremely low rates is that they interfere with the activity of an enzyme (acetolactate synthase) found only in plants. In fact, not all plants are affected by these herbicides. Some plants tolerate the sulfonylureas because they destroy the herbicide before it reaches the enzyme.

Because sulfonylureas (like OUST) are designed to affect only a specific plant enzyme, they would be expected to have minimal effects on humans, animals and insects. In an extensive battery of animal and environmental tests, this has been demonstrated to be the case.

Thus, it has been widely recognized that sulfonylureas (like OUST), represent a significant advance in the management of noxious or otherwise undesirable vegetation.

HOW SAFE IS OUST TO HUMANS?

An extensive battery of toxicity tests has been conducted on OUST. These include:

- A.** Short term tests which indicate what might happen if someone should accidentally come in contact with OUST in a concentrated form, such as when it is loaded into spraying equipment at the time of application.
- B.** Long term tests which are designed to indicate what cumulative effects, such as cancer or organ damage, might result from multiple exposures to OUST over extended time periods (for example, months to years).
- C.** Tests for reproductive and developmental effects, for determining the possibility of causing birth defects or effects on fertility.
- D.** Tests for determining the potential for causing genetic damage and mutations.

Based on the results of this extensive testing (lasting several years and costing millions of dollars): — OUST is very low in acute, short term toxicity (the US. Environmental Protection Agency has determined that OUST is in the lowest toxicity category for the purposes of identifying the precautionary language that must be on the product label)

- OUST does not cause cancer
- OUST does not cause birth defects
- OUST does not cause reproductive effects (such as sterility)

— OUST does not cause gene mutations or genetic damage

— OUST is low in toxicity associated with long term, chronic (lifetime) exposures.

Of course, any chemical should be treated with respect and should be used according to label instructions. This is just as true for things like aspirin and table salt, as it is for OUST Herbicide. Du Pont urges everyone to use common sense when using or applying our products. When label instructions are followed, we are confident that OUST (or any of our other products) can be used safely.

HOW SAFE IS OUST TO WILDLIFE AND THE ENVIRONMENT?

In addition to the tests outlined above, Du Pont has conducted extensive studies on the effects of OUST to wildlife and the environment. OUST is very low in toxicity to mammals, birds, and insects. It degrades at a reasonably rapid rate in the environment.

For example, in a recent ecosystem study with OUST, the half-life of residues on foliage directly treated with OUST was less than one day; after 3 days, essentially no residues could be detected with very sensitive analytical equipment. Because it is used at very low rates relative to conventional herbicides and because OUST degrades rapidly in the environment, there is less OUST released into the environment at the time of application. Because of this and the low toxicity of OUST, the “Margin of Safety” is significantly larger than for other conventional herbicides.

There are benefits to wildlife from the use of OUST in certain situations. OUST can control some non-native, noxious weeds that can crowd out plant species that provide animal food. Use of OUST along highways can control the narrow band of vegetation that attracts animals in areas

with more severe winters. This reduces the risk to both animals and humans caused by automobile collisions with startled animals which browse in these areas.

IS THERE ANY DANGER FROM MY EATING ANIMALS THAT HAVE EATEN FOLIAGE TREATED WITH OUST?

Exposure of animals to OUST residues in areas sprayed with OUST is extremely low. OUST does not accumulate in animals or the environment; it is readily metabolized and eliminated from animals via natural processes. OUST is normally applied only once per year and thus animals will not be exposed for long durations. There is very little likelihood that residues could be found in any tissues that would be consumed by man.

IF I EAT BERRIES OR MUSHROOMS THAT HAVE BEEN SPRAYED WITH OUST, IS THERE ANY DANGER?

The U.S. Environmental Protection Agency has not established tolerances for OUST on these commodities because there is little likelihood for any significant exposure to residues. As stated above, OUST is low in toxicity, is applied at very low rates and degrades rapidly in the environment. The treated berries or mushrooms would not make up a significant part of the diet. Therefore, the margin of safety from eating berries or mushrooms that have been sprayed with OUST is quite large.

However, this should not be interpreted as a suggestion that OUST is approved for use on these plants. Despite the low likelihood of adverse effects, it would be a violation of Commonwealth and State law to intentionally apply OUST to berries or mushrooms that are cultivated for consumption. Additionally, green leaf plants may well be damaged by the direct application of OUST.

IS IT SAFE TO DRINK WATER FROM A WELL IN AREAS TREATED WITH OUST?

Because OUST degrades rapidly in the environment and is used at very low rates, it is highly unlikely that OUST residues could be found in well water in areas treated with OUST. The only exception to this may be areas that are extremely environmentally sensitive to groundwater contamination (i.e. low organic content sandy soils where the groundwater comes very close to the surface). However, this is an unusual situation in most of Australia. Because of the low toxicity of OUST, even trace level residues of OUST would be well below what is considered a “safe” level when calculated in the same manner as the Environmental Protection Agency and other scientific and regulatory organisations.

CAN I WALK THROUGH AN AREA AFTER OUST HAS BEEN APPLIED?

There is no need to take unusual precautions when walking through an area where OUST has been applied. However, OUST, for some people, may irritate the skin or eyes; so you should wait until any spray mist has dissipated and dried; this is normally only a few minutes after application.

Anyone who is applying OUST should take the normal precautions when spraying, such as wearing a long sleeved shirt and eye protection. The label states: “Avoid contact with skin, eyes and clothing” These instructions are intended for those who handle OUST in its undiluted form.

DO HIGH LEVELS OF OUST BUILD UP IN THE SOIL?

No. OUST degrades readily in the soil and is not considered a persistent herbicide. In Delaware, U.S.A., OUST exhibited a half life (the time required for one-half of the applied OUST to be degraded) of about 4 weeks when applied according to label recommendations. As for any herbicide, it will degrade more slowly in colder temperatures than in warmer ones and the actual rate of degradation will depend on environmental conditions. However, since it is applied at much lower rates than conventional herbicides there is less environmental burden from the beginning. For example, at the 200g/ha rate, OUST is at 1/20th the level of a conventional herbicide applied at an 8kg/ha rate.

WHAT IS THE TOXICITY OF OUST TO FISH IN STREAMS ADJACENT TO AREAS THAT HAVE BEEN TREATED WITH OUST?

While it is impossible to test every single aquatic species, toxicity tests with OUST have been run on representative species. These include fresh, cold water (rainbow trout), fresh, warm water (bluegill sunfish) and freshwater invertebrates (waterflea and crayfish). Acute studies indicated no toxicity to these species at the highest concentrations achievable in the tests. A 30 day study with fathead minnows showed no toxic effects at 2.5 parts per million in water.

WHAT MEASURES SHOULD BE TAKEN TO ENSURE APPLICATOR SAFETY WHEN MIXING AND SPRAYING OUST?

FOLLOW THE LABEL DIRECTIONS.

Not only is this a requirement of Commonwealth and State law, but it is just good, plain common sense.

Anyone working with any chemical in a concentrated form should take reasonable care to minimise exposure to the product. Du Pont makes every reasonable effort to ensure that its products can be used safely. However, it is up to the individual handling a product to use it properly so as to minimise any potential hazards (to either himself or others) that may be associated with its use.

HOW WILL OUST AFFECT DESIRABLE PLANTS (CROPS, ORNAMENTAL VEGETATION, ETC.)?

Years of experience support the fact that OUST can be safely applied in most situations, as long as the label is carefully followed.

OUST is not labelled for use on crops or near desirable ornamental vegetation. While OUST is quite safe to humans, animals and insects, it is a very active herbicide and has effects on many, but not all, plant species. Some plants are sensitive to very low levels of OUST while others are not affected by much higher levels (they rapidly break it down). Because of the effects that OUST can have on some plants, appropriate precautions should be taken to prevent spray drift or off-target movement of runoff water or treated soil into areas where crops or desirable ornamentals and vegetables are growing or will be grown.

Sprayers used to apply OUST should not be used for other than non-crop applications.

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