



## **BRACKEN & ASULOX FAQ**

Bracken has a formidable array of chemical defences, with 28 known groups of toxic, teratogenic and carcinogenic chemicals produced in its tissues. It produces a variety of toxic effects on wild vertebrates, game birds, farm animals and man. These include vitamin B1 (thiamine) deficiency, brightblindness in sheep, acute poisoning in cattle and various contact carcinomas.

Extensive bracken banks in water catchment areas can affect water supplies. Up to 50% of incident rainfall may be lost from catchments with 80% or more cover of bracken. The cyclic processes in soil under bracken may slow down or reverse the normal podzolisation process in upland areas and while in soil-improving terms this is an advantage, it is damaging in relation to upland habitat management and supply of water.

Exudates from bracken contain many toxic substances and it is possible that these may impact on water quality.

It is in the water catchment areas there are strict guidelines controlling the use of pesticides, that the need to strike a balance between managing problem bracken and conforming to legal requirements is brought sharply into focus.

Man, animals and birds are at risk where bracken provides a favourable habitat for the sheep tick (*Ixodes ricinus*) which causes disease such as Louping ill, tick-borne fever, pyaemia and Lyme Disease. The latter is a matter of public health concern in the UK

and should be a strong force in driving the need for bracken management.

Definite cancer links have been established in animals which may feed on bracken, such as sheep, and there is a suggestion that human beings suffer in a similar way. In countries where young, raw bracken is eaten routinely, the incidence of upper alimentary tract cancer is higher than would normally be expected. There is little doubt that direct consumption is the main cause but there is also concern that water leaching through bracken stands may carry, and even concentrate, carcinogens.

In suitable conditions bracken will produce enormous quantities of spores. There are suggestions of a disease link with the ingestion and inhalation of bracken spores whilst individuals working in and around sporing bracken are advised to wear appropriate dust masks.

Some people may react violently to contact with fronds, resulting in a severe skin rash, similar to that of a bad nettle sting. In extreme cases this can be very severe and require medical attention.

### **Questions concerning the application of ASULOX**

Exposure to ASULOX: There is no danger to people, animals or birds exposed accidentally to ASULOX. Toxicology tests show the material to be far less hazardous than many household products.

Access: ASULOX represents no hazard to human beings or pets walking through treated bracken but it is good practice to allow spray to dry before allowing access.

Bees: ASULOX has no poisonous effect on bees by direct contact or ingestion, nor does it affect colony odour, which might lead to rejection by a colony. Honey production is unaffected where plants, e.g. heather, are sprayed in flower.

Livestock: Livestock should be kept out of treated areas for 14 days after spraying. This is to avoid any possible changes in palatability of the bracken itself or of non target poisonous weeds such as Ragwort. If Ragwort is present, stock should be excluded from such areas for 4-6 weeks after treatment.

Bilberries: There is no restriction on the picking and eating of bilberries after ASULOX has been applied to bracken in the area. All fruit should be washed before consumption.

Drinking water: ASULOX is approved for use in water catchment areas. If it finds its way into water, residue levels will be low and will decline. There will be no effect on the odour of water or taint. The water will be safe to drink.