



Looking at consumer safety

The three most important criteria for successful marketing of a natural product are that it is safe, effective and its activity can be measured. Of these criteria, safety is by far the most important.

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Deer velvet is safe to take

Although deer velvet, as traditionally used in China and Korea, is not known to be associated with any toxicity problems, it's most important for developing western markets to demonstrate, scientifically, that deer velvet is safe.

In this research project funded by the New Zealand deer industry, AgResearch Invermay worked with the School of Pharmacy at the University of Otago to carry out two experiments on rats to internationally agreed OECD guidelines. These studies set out to find out whether deer velvet is safe for people if taken in one very large dose (acute) or a lower dose for a prolonged period of time (sub-chronic). The results demonstrated that deer velvet is safe for oral consumption, based on the international methodology.

For the acute study six male and six female rats were each treated orally with a single dose of 2 g/kg of a finely ground commercially processed whole stick deer velvet powder that was suspended in water. The rats were observed for 14 days for any signs of toxicity and then pathology was undertaken. Any organs showing evidence of a pathological condition were further studied by light microscopy.

The main result was that there were no signs of any toxicity or gross behavioural changes and that no rats died as a result of consuming that dose of velvet. There were no pathological findings of clinical significance either at a whole body or histological level. The pathologists who carried out the study concluded there was no evidence of acute toxicity.

The sub-chronic study was carried out on rats of each sex – half untreated as a control and the remainder treated with 1000 mg/kg of the same deer velvet preparation as in the previous study for five days/week for 90 days. The rats were weighed and observed daily for signs of behavioural change and toxicity. After 90 days a

pathological examination was undertaken as for the previous study.

All rats survived the study and no visible signs of toxicity or behavioural change were observed. No abnormal findings of clinical significance were found at visual or histological level. There were no significant differences in body weight between the control and deer velvet treated groups.

Blood samples taken revealed few significant differences resulting from deer velvet treatment. Specifically there were no significant differences in haemoglobin, packed cell volume, platelets or any white blood cell type. In contrast, blood potassium was slightly, but significantly higher in the deer velvet treated group and blood calcium slightly but significantly lower, which may mean that more calcium was deposited in the bones.

Taken together the results show that deer velvet presents no acute or sub-chronic oral toxicity problems, and is safe for people to take. Although not surprising, this is a key finding in relation to the marketing of deer velvet as a dietary supplement in western countries.

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