

How hybrids are identified

by Invermay scientist Mike Tate

THE HYBRID identification test uses four single gene markers which show different types in Elk (also called Wapiti) and Red deer. A combination of Elk and Red deer gene markers in the blood of an animal clearly identifies it as a hybrid.

The markers are different in the degree to which they distinguish Elk from Red deer. Two are termed primary and two secondary markers.

In the primary markers — Hb (Haemoglobin) and Ptf (Post transferrin, also called Hpt) — all pure Elk typed from populations in Canada and the US have one type, and all wild captured pure Red deer typed in New Zealand have another. A combination of Elk and Red types at the primary markers clearly identifies a hybrid.

The difference between the sub species at the secondary markers is not quite so clear-cut. Elk mainly show a different type to Red deer, but in both subspecies animals of pure blood do show some variation in type. This means the secondary markers cannot be used to identify animals as hybrids. However they can identify animals

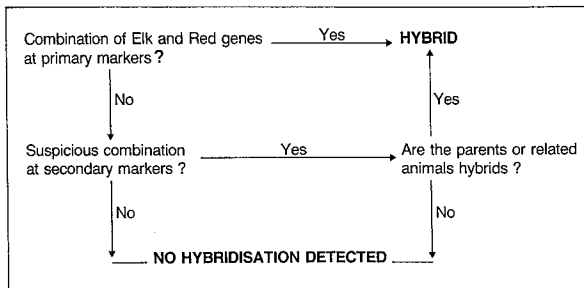


Figure 1

which show a combination of genes unusual in pure animals but common in hybrids. Animals with this combination are identified for further investigation.

The way animals are identified as hybrids by blood-testing is outlined in Figure 1.

First, the primary markers are examined. If the animal shows a combination of Elk and Red deer genes at the

primary markers it is a hybrid. If this is not the case the secondary markers are examined. A suspicious combination of genes at these markers is an alert to look harder at some animals.

If the sire and dam of these animals are known and/or their herd of origin is known, bloodtyping can be used to tell if the unusual combination originates from a hybridisation in the ancestry of the animal. □



Keith Hood holds an animal while Mike Tate takes a blood sample at Mt Hutt Station
No Elk genes were detected in the 198 Mt Hutt deer tested