

J.R. Ingram, L.R. Matthews, J.F. Carragher, and P.R. Schaare¹

Animal Behaviour and Welfare Research Centre, AgResearch Ruakura Research Centre, Private Bag 3123, Hamilton, New Zealand;

¹Engineering Development Group, HortResearch Ruakura Research Centre, Private Bag 3123, Hamilton, New Zealand.

Changes in various blood parameters can be used to assess the relative stressfulness of animal handling procedures. Unfortunately, traditional blood sampling methods all involve some form of handling and restraint, which can itself induce a stress response and therefore confound interpretation of the measures obtained. To avoid the need to handle animals for blood sampling, a remote blood collection and infusion device (Dracpac) has been developed for use on free-ranging animals.

The Dracpac device continuously draws blood from the jugular vein by the action of a peristaltic pump. The blood is heparinised and collected via two 38 port rotary valves into a maximum of 74 separate sample tubes. The samples are stored on the animal until removal and processing.

The Dracpac is fully programmable such that start times can be delayed and control over sample duration and volume as well as the ability to infuse substances is possible. The device weighs 2.5kg (one valve 37 samples) or 4kg (2 valves 74 samples).

To date, the device has been used to monitor various blood parameters in both deer and cattle during a variety of farming practices including surgical castration, velvetting transport, and yarding. The results from these studies (an example of which is given) clearly illustrate the stress-free nature of blood collection using the Dracpac device as well as the obvious advantages in using such a system in animal welfare research.