**356 Development of methods for measuring GRF and SRIF in hypophyseal portal blood of male red deer (Cervus elaphus).** J. Webster*, T. Manley, S. Stuart, I. Corson, and J. Suttie, *AgResearch, Invermay Agricultural Centre, New Zealand.*

Growth in male red deer is seasonal, imposing limits on farmed venison production in New Zealand. Red deer grow rapidly in spring and slowly in winter despite ad-libitum high quality food. Previous studies showed that the GH pattern alters with growth state. To study the basis for the different GH patterns, we modified a procedure from sheep[1] to collect hypophyseal portal blood over 24 hours from undisturbed red deer. This is the first reported use of this method in red deer and problems encountered are described. Portal blood was collected from 6 deer into aprotinin (500 KIU/ml), centrifuged and plasma frozen. A GRF assay developed had a sensitivity of 2-4 pg/tube using tracer purified by HPLC. The SRIF assay had a similar sensitivity. Problems occurred with measurement of GRF and SRIF due to poor peptide recovery from portal plasma. Initially we used a MeOH/TFA extraction. A profile measured by this method had mean GRF and SRIF of 12.5 pg/ml and 47.5 pg/ml respectively and peptide recovery of 44-66%. GRF and SRIF patterns had no clear relationship with GH. Recovery of peptide added to jugular plasma during portal collection was poor and variable. A C18 Sep-Pak extraction had similar results. Acetone /HCl was tested and mean GRF recovery from jugular blood consistent at 50%. A profile measured with this method had mean GRF of 23.9 pg/ml and mean SRIF of 8.1 pg/ml. GRF and SRIF recoveries were poor at 28% and 12% respectively and GRF and SRIF patterns were not clearly related to GH. An affinity column method was also tested unsuccessfully. Further peptide extraction methods are being investigated. [1]Caraty et al., (1994) Methods in Neurosciences 20: 162-183.