

## **AWN-PP-12**

### **TITLE**

#### **COLLECTION AND COMPOSITION OF SALIVA FROM SUCKLING PIGLETS**

Floris Bikker<sup>1</sup>, Tijs J. Tobias<sup>2</sup>

<sup>1</sup> *Academisch Centrum Tandheelkunde Amsterdam*

<sup>2</sup> *Faculty of Veterinary Medicine, Utrecht University, the Netherlands*

### **CONTENT**

#### **Background and objectives**

The potential composition of saliva and the easy way in which it can be collected, makes it an important matrix for the diagnosis of several diseases or biomarkers. Therefore, the aim of this study was twofold: to develop best practices for saliva collection of individual suckling piglets and determine age- related protein patterns in saliva.

#### **Material and methods**

A randomized block design was used with 5 groups of 32 suckling piglets from 18 litters of different ages (1-2 days, 1, 2, 3 and 4 weeks old) which had to chew for 0.5, 1, 2 and 4 minutes on a Salivette for saliva collection. The quantity, protein concentration, protease activity and protein composition in the saliva samples were determined with a protein assay, protease assay and SDS-page.

#### **Results**

It was found that a minimal sampling time of 2 minutes is necessary to collect sufficient saliva in individual suckling piglets from ~2 weeks and older to perform the abovementioned analyses. In contrast, in younger piglets, saliva collection was hardly possible, even at 4 min collection time. Both amount of saliva collected and protein concentration increased with sampling time and both parameters were dependent on age. Protease activity was associated with saliva quantity, protein concentration and a random litter effect. Moreover, the protease activity was higher in piglets from 3 and 4 weeks old than in younger piglets. Finally, the longer the chewing time, the higher the probability that proteins with a mass of 110 and 20 kDa were detected in saliva samples. So far the identity of these proteins has not been revealed.

#### **Conclusion**

To obtain sufficient saliva from each piglet, individual saliva sampling is possible in pigs >2 weeks old and requires 2 minutes of chewing time per piglet. With these samples various biochemical analysis can be performed.