

# SEED GERMINATION TEST FOR PREGNANCY DIAGNOSIS FROM URINE IN ALPACAS (*VICUGNA PACOS*)

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## Introduction

Collecting of urine belongs to non-invasive research methods, which are popular nowadays. They enable to collect data without handling or capturing animals.

The research was carried out in the period from April 2013 to February 2014 on three Czech private farms.



## Sampling of Urine

Urine was collected non-invasively into plastic cups fastened on a rod, in 6-8 week intervals.

In total, 60 urine samples were collected from 12 alpacas which were even non-pregnant or in different parts of pregnancy.

## Aim

- to examine the possibility of catching fresh urine directly from female alpacas (*Vicugna pacos*),
- to evaluate the seed germination test as a pregnancy diagnostic test in alpacas.

## Seed Germination Test

For the seed germination test, mung beans (*Vigna radiata*) and winter wheat seeds (*Triticum aestivum*) were used and urine was diluted to 1:4 and 1:14 ratios. Germination rates were counted 24, 48, 72, 96, and 120 hours after establishment of experiments. Lengths of shoots were measured after 120 hours.



## Results

It was found out that urine of alpacas inhibited germination and growth of seeds in general. The inhibitory effect of urine on seed germination and growth was higher with the usage of urine with 1:4 concentration than with 1:14 concentration. Usually, seeds germinated and grew better in urine of pregnant females than in urine of non-pregnant females. Germination rates of mung beans treated with urine with 1:4 and 1:14 concentrations were always significantly lower in urine of non-pregnant females than in urine of pregnant females (Mann-Whitney U test:  $p < 0.05$ ).

## Conclusion

Season seemed to be an important factor, which could influence the results of the test. It should be considered especially in case of using this test in tropics, because the results could vary under different conditions. Further research was recommended, but it seems that mung beans treated with urine with 1:4 concentration could be usable for pregnancy diagnosis in alpacas by both seed germination rates counting and shoot lengths measuring.

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