

# DERMATOLOGY PEARLS

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## *Quantifying Organisms on Cytology*

Cytology of skin and ear infections is important to perform in order to correctly identify infections and prescribe appropriate therapy, as well as to monitor response to therapy and interpret culture results. Less than 1 of each type of organism (yeast, cocci, or rod) per oil-immersion field (OIF) is seen in normal skin, and inflammatory cells are not found on normal skin cytology. On otic cytology, >3 yeast/OIF in dogs and >1 yeast organism/OIF in cats may be considered abnormal. For bacteria, > 5 cocci/OIF and > 1 rod/OIF is considered abnormal on otic cytology, as are any inflammatory cells. A recent paper describes a semiquantitative way to assess organisms on cytology:

**Vet Dermatology** 2012 Oct;23(5):426-e80.

Reproducibility of a semiquantitative method to assess cutaneous cytology

Budach SC, Mueller RS.

### **BACKGROUND:**

Cutaneous cytology is used in veterinary dermatology to assess bacteria and yeast on the skin surface and in the ears for diagnostic purposes and to monitor treatment success. A number of methods were used in reported studies to quantify micro-organisms on cytology, but evaluation of the intra- and interobserver reliability of the methods is rare.

### **METHODS:**

A total of 60 experienced and inexperienced veterinarians and veterinary students were asked to evaluate 10 glass slides and 18 photographs of cutaneous cytology twice. Cocci, rods, yeast, neutrophilic and eosinophilic granulocytes and macrophages were graded from 0 to 4+.

### **RESULTS:**

The intra-observer reproducibility for evaluating the slides in the experienced group was 84.3%; in the inexperienced group it was 82.6%. For the photographs, the intra-observer reproducibility was 92.1% in both groups. The interobserver reproducibility for evaluating the slides was 81.6 and 81.0% in the experienced and inexperienced group, respectively; corresponding values for the photographs were 91.0 and 90.0%. There was no significant difference between different participants or between the first and second evaluation by each participant for any of the parameters graded.

### **CONCLUSION AND CLINICAL IMPORTANCE:**

Based on these results, this semiquantitative method of grading can be recommended for evaluating and monitoring of antimicrobial therapy in daily practice.

### Classification of the semiquantitative scale

Classification	Description
0	No bacteria/yeast/inflammatory cells
1+	Occasional bacteria/yeast/inflammatory cells present, but slide must be scanned carefully for detection
2+	Bacteria/yeast/inflammatory cells present in low numbers, but detectable rapidly without difficulties
3+	Bacteria/yeast/inflammatory cells present in larger numbers and detectable rapidly without any difficulties
4+	Massive amounts of bacteria/yeast/inflammatory cells present and detectable rapidly without difficulties