

Introduction

- Gastrointestinal nematodes (GIN) are a worldwide major threat in ruminant livestock
- Resistance against conventional anthelmintics is common
- Condensed tannins (CT), plant secondary metabolites, show evidence of anthelmintic properties but also feature detrimental nutritional effects at higher dosage
- Evidence of 'self-meditative behaviour' in goats when infected with GIN¹
→ Change in feed preferences when infected with GIN?

Animals, Materials & Methods

- Free choice cafeteria feeding trial for 12 weeks with 4 test feeds of varying tannin contents (pelleted leaves of sainfoin, walnut, blackberry, willow) and tannin-free hay pellets (Fig.1)
- 12 juvenile boar goats (3-4 months) in individual boxes
- 2 trial groups à 6 goats:
 1. Treatment group W (infected/feeding trial)
 2. Control group C (non-infected/feeding trial)
- At the beginning, goats were free of GIN. After 4 weeks, group W was experimentally infected with third-stage GIN larvae
- Both groups were offered a free choice cafeteria trial for 30min per day prior to the usual daily feeding time
- Measurements: video surveillance, amount of ingested pellets, weekly analyzes of blood parameters, saliva composition and feces



Figure 1: Feeding trough with experimental pellets

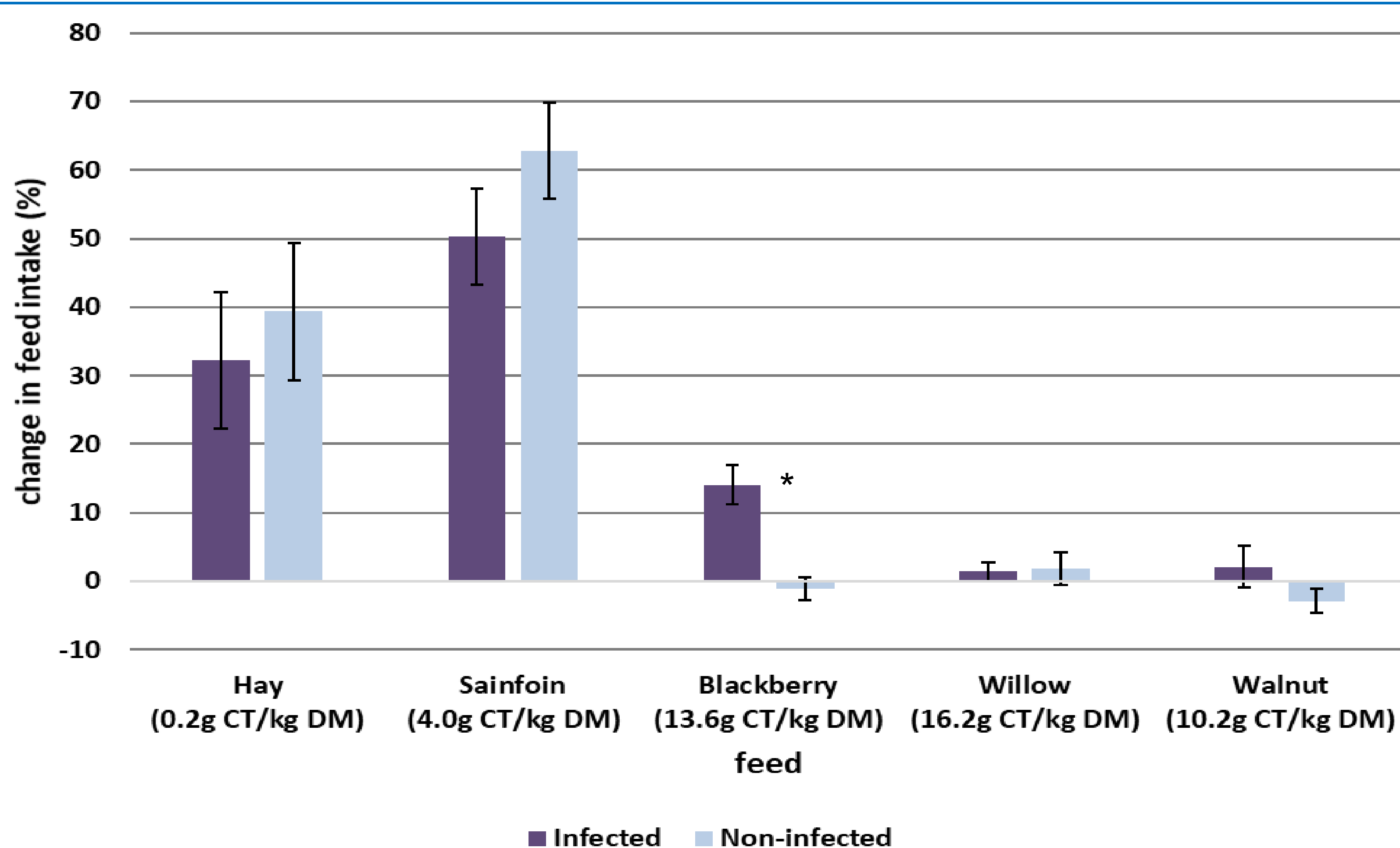


Figure 2: Proportional change [%] of intake of test feed after infection (* correlation is significant at the 0.05 level)

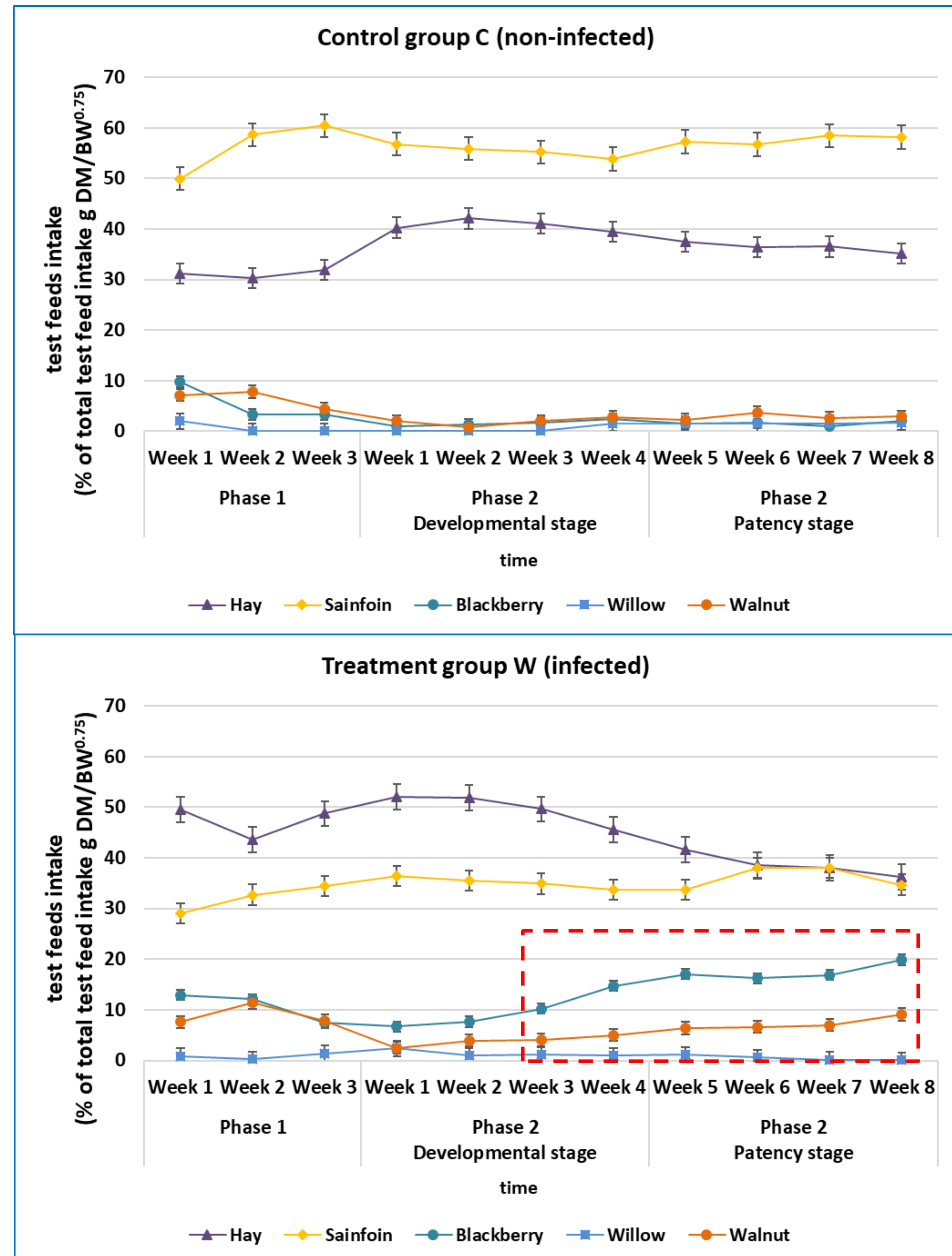


Figure 3: Average proportional choice of test feeds as percentage [%] from total test feed intake [g DM/ BW^{0.75}] by experimental week and treatment group (means± SD)

Results

- Animals of infected group W showed a significantly higher proportional increase of blackberry pellet intake of 14 % after infection (Fig.2)
- Treatment group W shows an constant increase of proportional test feed intake of blackberry and walnut pellets 3-4 weeks post infection (Fig.3)

Conclusion & Outlook

- Infected goats showed clear evidence of a shift in preference for tannin-rich blackberry pellets in a choice trial after infection with nematodes
- Willow pellets with the highest CT-concentration might be rejected due to contained salicin content (→ salicylic acid)
- Further examination of saliva may help to explain the shift in preferences due to possible changes in saliva composition

