

Evaluation of Different Preservation Methods Applied to Coproparasitological Diagnosis

Helena Carrasco Muñoz

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01. INTRODUCTION & OBJECTIVES

Coproparasitological diagnosis is a key tool in veterinary medicine to detect gastrointestinal parasites and monitor anthelmintic resistance. Sample integrity is essential for reliable results, yet immediate processing is not always feasible. Preservation methods - physical (refrigeration, freezing) or chemical (formalin, SAF, DESS, glyoxal, among others) - allow sample storage, but their impact on egg counts and morphology remains poorly characterised for ruminant nematodes.

- To evaluate the efficacy of different physical and chemical preservation methods on faecal samples positive for gastrointestinal nematode eggs.
- To assess their ability to maintain stable egg counts (OPG) over time.
- To determine their capacity to preserve egg morphology and inhibit larval development over a 90-day period.

02. MATERIAL & METHODS

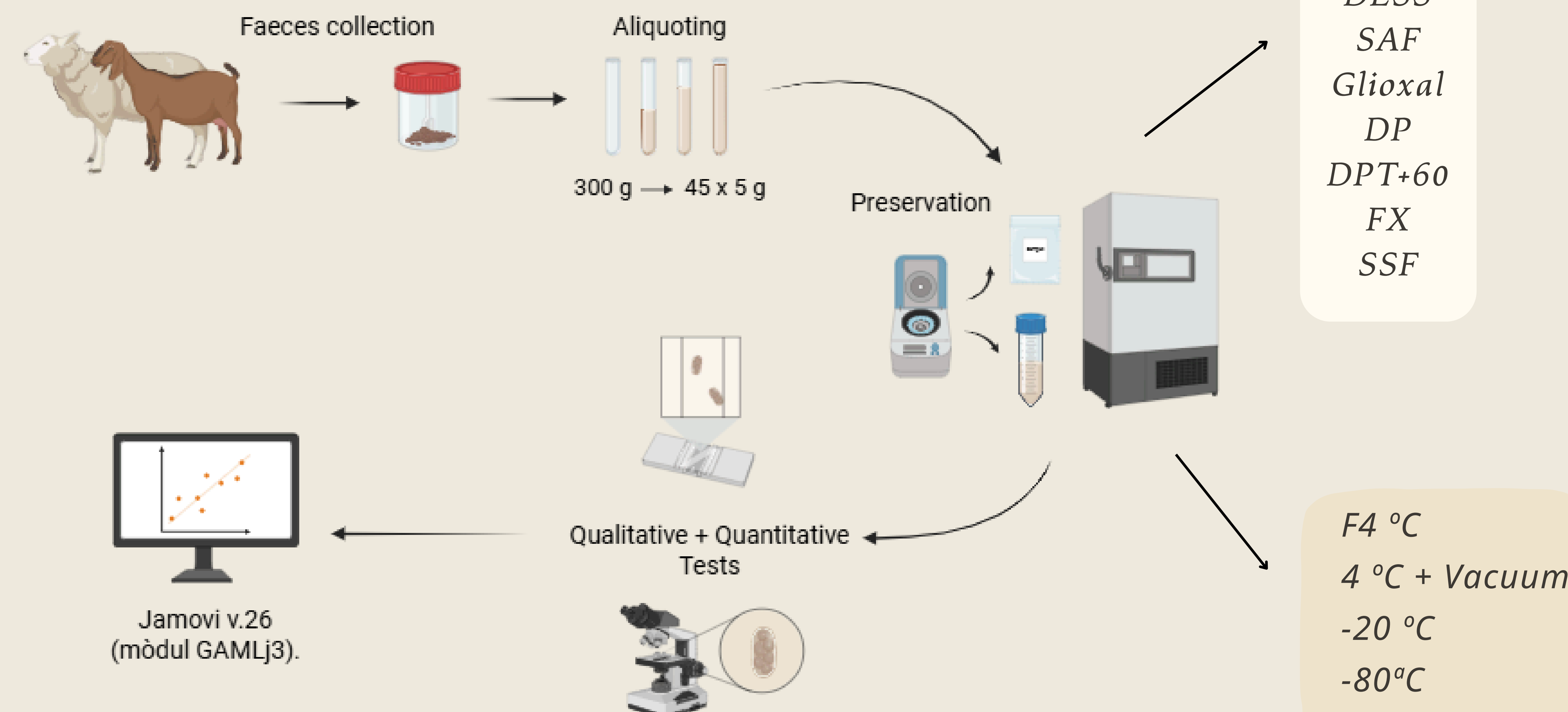


Figure 1. Schematic representation of the material & methods.

03. RESULTS & DISCUSSION

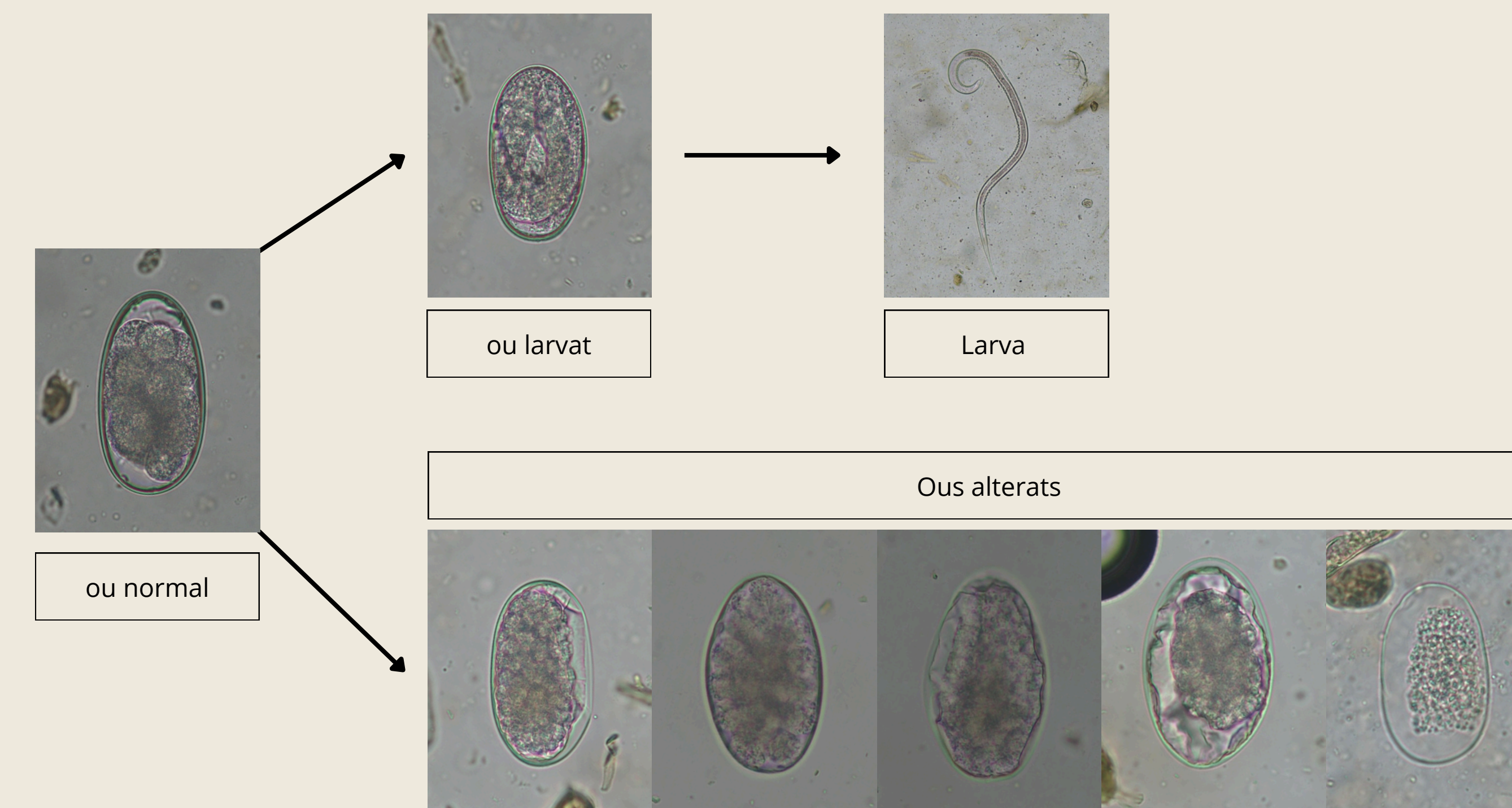


Figure 2. Schematic representation of the possible developmental outcomes of a nematode egg observed by copromicroscopy. From a normal egg (left), development may proceed either through embryonation to a larvated egg and larval hatching (top) or through progressive morphological degeneration.

Table 1. Comparison of OPG counts among preservation methods, observation periods, and the control group (Day 0).

	DIA 7	DIA 15	DIA 30	DIA 90
SSF	22	18,3	23,8	19,3
GAF	21	19,3	18	18,5
SAF	17	23	22,3	10,3
FOR	20	21,5	18,5	11,3
DP	23,5	15,8	6	4,5
DPT+60	19,3	16	9,3	5,5
DES	6,3	10,8	13,8	6,8
FX	1	2	2,5	1,3
T+4	28,8	23,5	20	4
T+4B	24	20,3	17,8	8,3
T-20	0,8	7,5	4,8	2,5
T-80	3,5	2,3	0,8	1

- Significant differences in counts compared to the Day 0 control group
- No significant differences compared to the Day 0 control group.

04. CONCLUSIONS

- DESS, FX, and freezing were already unsuitable at day 7.
- DP and DPT+60 were only effective up to one week.
- FOR, SAF, and refrigeration maintained stable counts up to day 30, with SAF showing the best morphological preservation (grade 0 until day 30). GAF and SSF preserved OPG counts throughout 90 days but failed to maintain egg morphology long-term.
- Egg count and morphological preservation are independent parameters.
- SAF is recommended when structural integrity is the priority
- GAF or SSF when long-term quantification is required.