

STROBE Statement—Checklist of items that should be included in reports of *cross-sectional studies*

	Item No	Recommendation	Location	Details
Title and abstract	1	(a) Indicate the study's design with a commonly used term in the title or the abstract	Abstract	The study is explicitly described in the Abstract as a cross-sectional study.
		(b) Provide in the abstract an informative and balanced summary of what was done and what was found	Abstract	Unstructured single-paragraph abstract (journal format) summarizing rationale, design, methods, main results, and conclusions.
Introduction				
Background/rationale	2	Explain the scientific background and rationale for the investigation being reported	Introduction (paragraphs 1–3)	Scientific background and relevance of bTB, PTB, and EBL from an animal and One Health perspective are clearly explained.
Objectives	3	State specific objectives, including any prespecified hypotheses	End of Introduction	Objectives include estimating prevalence, evaluating diagnostic agreement, and identifying associated animal-level epidemiological patterns.
Methods				
Study design	4	Present key elements of study design early in the paper	Materials and Methods – Study area and design	Cross-sectional design explicitly stated.
Setting	5	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection	Materials and Methods – Study area and design	Geographic location, production system, and study period (Nov–Dec 2022) are described.
Participants	6	(a) Give the eligibility criteria, and the sources and methods of selection of participants	Materials and Methods – Study area and design	Target population (lactating cows and replacement heifers ≥ 6 months of age) and feasibility-based convenience selection are described; the final dataset also included 12 calves < 6 months and 5 young males, which were retained in the analyses.

Variables	7	Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable	Materials and Methods – Data collection and statistical analysis	Outcomes (ELISA, PCR, TST results), exposures (breed, age, milk yield), and covariates are clearly defined.
Data sources/ measurement	8*	For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than one group	Materials and Methods – Tuberculin test; Serological testing; DNA extraction; PCR/qPCR sections	Diagnostic tests, manufacturers, protocols, cutoffs, and quality control measures are fully described.
Bias	9	Describe any efforts to address potential sources of bias	Materials and Methods – Study area and design; Discussion – Limitations	Convenience sampling, lack of herd-level data, and cross-sectional design limitations are acknowledged.
Study size	10	Explain how the study size was arrived at	Materials and Methods – Study area and design	Sample size reflects feasibility-based sampling during routine farm visits; no formal sample size calculation due to diagnostic agreement focus.
Quantitative variables	11	Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why	Materials and Methods – Data collection and statistical analysis	Age was analysed as a continuous variable and dichotomized (<48 vs. ≥48 months); daily milk yield, available as a single value per herd, was treated as a herd-level variable and categorized as Q1 ≤12 L/day or Q2 >12 L/day (14 L/day).
Statistical methods	12	(a) Describe all statistical methods, including those used to control for confounding	Materials and Methods – Data collection and statistical analysis	Descriptive statistics, Wilson CIs for apparent prevalence, Cohen's kappa for diagnostic agreement, and univariable and multivariable logistic regression with herd-clustered standard errors; goodness of fit (Pearson test across covariate patterns), collinearity, and significance thresholds are described.
		(b) Describe any methods used to examine subgroups and interactions	Results	Subgroup analyses were conducted by

			– Animal-level epidemiological patterns according to BLV diagnostic outcomes	stratifying results according to breed, age group, and milk yield categories. Separate bivariate and multivariable logistic regression models were fitted for ELISA and PCR outcomes. Formal statistical interaction terms were not included.
		(c) Explain how missing data were addressed	Materials and Methods – Data collection and statistical analysis	No missing data were identified for the variables included in the analyses; therefore, complete-case analysis was performed, and no data imputation methods were required
		(d) If applicable, describe analytical methods taking account of sampling strategy	Materials and Methods – Study area and design Materials and Methods – Data collection and statistical analysis	Animals were selected through convenience sampling during routine farm visits. No sampling weights were applied; clustering of animals within herds was accounted for with cluster-robust standard errors (herd as cluster). The implications of the non-probabilistic sampling strategy are acknowledged in the Discussion.
		(e) Describe any sensitivity analyses	Materials and Methods – Data collection and statistical analysis Discussion – Limitation	No formal sensitivity analyses were performed. Given the cross-sectional design, low prevalence of some outcomes, and uniform PCR-negative results for bTB and PTB, sensitivity analyses were not considered applicable. These limitations were addressed in the interpretation of the results
Results				
Participants	13*	(a) Report numbers of individuals at each stage of study—eg numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analysed	Results – Descriptive analysis of the study population	371 cattle (366 females and 5 males) from 30 herds (mean 12.4 animals per herd; range 2–63) were included and analysed; all animals had complete test results.

		(b) Give reasons for non-participation at each stage	Materials and Methods – Study area and design	Herd participation depended on accessibility and owner willingness; within herds, all eligible animals present and safely restrainable on the sampling day were included. Numbers of eligible animals not sampled were not recorded.
		(c) Consider use of a flow diagram	Not included	
Descriptive data	14*	(a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential confounders	Results – Table 1; Online Resource 2, Tables S1 and S3	Breed, age, milk yield, and distribution across diagnostic outcomes are reported.
		(b) Indicate number of participants with missing data for each variable of interest	Not applicable	No missing data were identified for the variables included in the analyses
Outcome data	15*	Report numbers of outcome events or summary measures	Results – Diagnostic test results (Tables 2 and 3)	Apparent prevalence and diagnostic agreement results are clearly presented.
Main results	16	(a) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (eg, 95% confidence interval). Make clear which confounders were adjusted for and why they were included	Results – Animal-level epidemiological patterns according to BLV diagnostic outcomes (ELISA and PCR); Tables 4 and 5 (unadjusted), Tables 6 and 7 (adjusted)	Crude and adjusted ORs with 95% CIs based on herd-clustered standard errors; models included breed, age group, and herd milk yield category.
		(b) Report category boundaries when continuous variables were categorized	Materials and Methods – Data collection and statistical analysis; Tables 1, 4, and 5	Age: <48 vs. ≥48 months; age groups ≤1, 1–2, 2–3, and >3 years. Herd milk yield: Q1 ≤12 L/day; Q2 >12 L/day (14 L/day).
		(c) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period	Not relevant	
Other analyses	17	Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses	Results – Multivariable models (Tables 6 and	Separate models for ELISA and PCR outcomes are presented and interpreted.

Discussion				
Key results	18	Summarise key results with reference to study objectives	Discussion – paragraphs 1–3	Main findings summarized in relation to study objectives.
Limitations	19	Discuss limitations of the study, taking into account sources of potential bias or imprecision. Discuss both direction and magnitude of any potential bias	Discussion – Limitations paragraph	Cross-sectional design, subgroup size, lack of herd-level variables, and diagnostic constraints are clearly discussed.
Interpretation	20	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence	Discussion – paragraphs 2–5	Results interpreted in the context of diagnostic windows, epidemiology, and prior literature.
Generalisability	21	Discuss the generalisability (external validity) of the study results	Discussion – Limitations and concluding paragraphs	Applicability to Colombian and similar Latin American dairy systems is discussed with caution.
Other information				
Funding	22	Give the source of funding and the role of the funders for the present study and, if applicable, for the original study on which the present article is based	Statements and Declarations – Funding	Resources from the Colombian Ministry of Agriculture and Rural Development (MADR) allocated to AGROSAVIA; the funder had no role in the study.

*Give information separately for exposed and unexposed groups.

Note: An Explanation and Elaboration article discusses each checklist item and gives methodological background and published examples of transparent reporting. The STROBE checklist is best used in conjunction with this article (freely available on the Web sites of PLoS Medicine at <http://www.plosmedicine.org/>, Annals of Internal Medicine at <http://www.annals.org/>, and Epidemiology at <http://www.epidem.com/>). Information on the STROBE Initiative is available at www.strobe-statement.org.