Review of: "Incidence risk of major reproductive disorders of dairy cows and cow-level risk factors in Wolaita Sodo town, southern Ethiopia"

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Potential competing interests: No potential competing interests to declare.

The research is of interest and, in general, well carried out. There are certain issues, which could be clarified, before publication, concerning the used methods in data analysis.

The authors briefly stated that incidence risk was calculated. It would be useful if some detail on how such a disease frequency measure was used and if its usage could be clearly justified. In fact, in Dohoo et al 2012, Chapter 4, Incidence risk is defined as: ***"…the probability that an individual will contract or develop a disease in a defined time period. Risk, as a measure of frequency, should be restricted to closed populations where the individual is observed for the full risk period***." I would suggest that the author clearly explain why their observations comply with these requirements, so as to fully justify the use of incidence risk.

As a second comment, it seems that the authors carried out a statistical analysis of association between risk factors and the outcomes of interest, by using separate contingency tables. I would suggest considering a multivariable analysis, where the association between several predictors (or independent variables) and each outcome of interest is estimated. In this way, association terms will be obtained, as adjusted for confounding. Furthermore, interactions between risk factors will also be estimated, meaning that the association between one risk factor and an outcome might be modified, based upon the exposure level to another, different risk factor. I believe that this would provide a deeper insight into the considered problems. Given the type of data at hand, logistic regression might be an option. Furthermore, in case data were collected on individual cows, belonging to the same herds, non-independence of observations gathered on cows within the same herd could be considered, by using the so-called mixed models. I can provide further indications, if needed.