In this study, the authors estimated the thresholds for reporting suspicions of HPAI outbreaks in broiler farms. They used mortality data and feed and water intake data on eight broiler farms infected with HPAIV. To estimate the thresholds of mortality rate and daily feed and water intake, they applied the GLMM model and LMM model, respectively, which were reported in a previous study (Gonzales et al., 2018). Moreover, they estimated the transmission rate of within-flock transmission of HPAI using a model method based on outbreak data on three farms by applying the approach reported by Hobbelen et al., 2020. The results showed that a daily mortality rate higher than 0.17% is an effective threshold for reporting suspicions of HPAI. The data of food and water intake were difficult to establish reliable thresholds for reporting HPAI suspicions. The estimated transmission rate of the within-flock transmission ranged from 1.1 to 2.0 per day, suggesting that the transmission in broiler herds seems slower than in layer flocks (the transmission rate > 4.4 per day in the previous study).

I think this manuscript is nice and interesting. The manuscript is described in a simple and straightforward style. However, I have some comments as followings.

<Abstract>

I think “established” is better than “stablished.”

<Introduction>

As mentioned above, “establishing” is better than “stablishing.”

<Methods>

Cases section

Eight broiler farms were analyzed in this study. How is the production system of broiler farms in the Netherlands; such as boilers reared in cages or on the floor, also, indoors or outdoors?

Daily mortality section

“the daily number of dead broilers was the explanatory variable…”; I think “explanatory variable” should be replaced with “response variable.”

“the age of the broilers in days was the response variable…”; I think “response variable” should be replaced with “explanatory variable.”

As for the description of the random effect, I was a little confused. How many random effects were included in the GLMM model? According to Table S1, random effects were “Farm: flocks”, “Farm: flock: age”, and “Farm.” However, in the main text, the description of “Farm” seems to lack. Please explain.

Feed and water intake section

It was difficult to follow how did the authors derived “2.6 times the expected daily standard deviation”?

“we assessed a cero increase or decrease…”; I think “zero” is better than “cero.”

2.2.2. Quantification of transmission

This section is too simple. I would like to suggest that the authors add a more detailed description a little bit. “A detailed description of these parameters is provided in (12)”; did the authors apply a mathematical modeling approach (e.g. SEIR model)? Please clarify. Did the authors use a maximum likelihood estimation method to estimate the transmission rate? If the authors would like to avoid a complicated description in the main text, adding a supplementary file would be helpful for readers to understand the estimation methods.

I also recommend that assumption of the latent and infectious periods should be added in this section.

Additionally, maybe it would be good to compare not only transmission rates, but also the reproduction number R0.

I suggest that the authors add the name of the package in making a mathematical model ana estimating the transmission rate.

<References>

The reference needs to be modified based on the guide for authors. Also, the information on No.27 seems incomplete. Is it an official guideline in the Netherlands?

<Table S2>

Footnote 1: “mortality”? Please check.

<Table S3>

Footnote 1: “mortality”? Please check.

In footnote 2, “feed intake” is replaced with “water intake.”