The manuscript deals with an important topic of modelling spatial variability in large on-farm trials. A Bayesian framework is adopted to estimate the posterior distribution of parameters. Also, the proposed method is applied on a real on-farm strip trial from Las Rosas, Argentina, with the aim of obtaining a spatial map of optimal nitrogen rates for the entire paddock. The manuscript requires revision before it can be accepted for publication. My specific comments are listed below:

1) Why was weakly informative prior preferred? How do you define a weakly or strongly informative prior?

2) Four models are used in the analysis with conditions of with or without spatial correlation. Why was the model uncertainty of each of them not characterised?

3) Figure 3 presents the realisations of 100 simulations. It is known that more informative prior will give better results than vague prior. The results do not suggest anything new. The authors could have analysed the uncertainty of model prediction.

4) What is expected error variance in equation (27)? How to determine it? Will the error in spatial variability problem be linear?

5) In equation (28) how are correlation parameters determined?

6) In Figure 4, PP(posterior predictive) checking is done against the observed data Y. But you have used the same dataset to update the parameters and obtained posterior distribution of parameters. Hence, the posterior predictive results will be close to the observations. The authors could have checked the reliability of the model by performing PP checking on some other dataset obtained from the same site.