This manuscript presents an exploration of improving the YOLOv8 model for target detection in complex field scenarios. Overall, the paper is well-structured. The authors have integrated CBAM, BiFPN and WIoU v3 into YOLOv8 model, and the details of these improvements are clearly presented. The experimental design is relatively sound. The authors have conducted a series of experiments and compared the improved model with the original model and several state-of-the-art methods. And the results of experiments are also well-presented. However, there are some small questions that need to further clarification.

1. In line 408-410, the authors referred to five types of obstacles, the question is that these types of obstacles is insufficient for unmanned agricultural machinery in the field. Small animals or farm tools left in the field are also likely to be encountered.
2. A more detailed description of the dataset used in the experiments should be added. For example, the preprocessing steps, including data normalization, augmentation techniques should be clearly described.
3. Fig.13 and 14 are not aesthetically pleasing. The text in Fig.13 is too small to be clearly read, while the text in Fig.14 is too large.
4. The parameter of epoch was set to 200, but the results after epoch 150 are not shown in the figures.(Fig.9 and 14)
5. The discussion section of this paper is somewhat simplistic. A more in-depth and comprehensive discussion of the research results is needed. For example, introduce the comparison with the results of previous studies. In addition, the discussion of the research limitations can be added.