Dear Editor,

On behalf of all authors, I am writing to submit our manuscript entitled, "*Optimal design for on-farm strip trials --- systematic or randomised?*" for consideration as a *Field Crops Research* paper.

In recent years, on-farm experimentation (OFE) has garnered substantial attention from researchers. However, the proper design of large-strip trials has received inadequate discussion. Traditionally, agronomists and biometricians have favoured randomised designs for OFE trials. Our research, employing simulation studies that integrate Bayesian hierarchical models and geographically weighted regression (GWR) to create varying treatment maps, reveals that a systematic design outperforms a randomised design in terms of robustness and smaller mean squared errors (MSE) on coefficients under specific circumstances.

We believe that our work contributes significantly to the ongoing research on OFE topic and hope to raise awareness and stimulate further discussion within the research community. This exploration opens avenues for refining OFE methodologies and encourages a more nuanced consideration of design choices in agricultural experimentation.

We confirm that this manuscript has not been previously published and is not currently under consideration by any other journals, and that all authors have approved the contents of the paper and have agreed to Field Crops Research’s submission policies. We are unaware of any conflicts of interest with respect to the named authors.

Yours sincerely,

Zhanglong Cao

Corresponding Author  
Research Fellow

Curtin Biometry and Agricultural Data Analytics, Centre for Crop and Disease Management  
Curtin University  
Bentley, Australia, 6102  
[zhanglong.cao@curtin.edu.au](mailto:zhanglong.cao@curtin.edu.au)   
+61 (04) 0586 6482

Jordan Brown, [jordan.brown@curtin.edu.au](mailto:jordan.brown@curtin.edu.au)

Julia Easton, [julia.easton@curtin.edu.au](mailto:julia.easton@curtin.edu.au)

Mark Gibberd, [M.Gibberd@exchange.curtin.edu.au](mailto:M.Gibberd@exchange.curtin.edu.au)

Suman Rakshit, [suman.rakshit@curtin.edu.au](mailto:suman.rakshit@curtin.edu.au)