A Bayesian analysis of data from on-farm trials in legumes in Afghanistan

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**Abstract:**

On-farm demonstration (OFD) are conducted to provide a real-time comparison of the recommended technology and the farmer practice in farmer’s field, and are effective and easy way to convince the farmers on the potential advantages of adopting new technologies or “seeing is believing”. Since the OFDs are routinely conducted under a crop improvement program and their data analyzed, such OFDs can provide prior information on various parameters of the model for analyzing a current data. In the present study, data from 2009-2011 were analyzed and the estimates provided the prior information. While such information remain unutilized in a frequentist approach, they can be used under a Bayesian approach. A Bayesian approach is discussed for analysis of such demonstrations for evaluating the improved varieties of chickpea (Sehat and Madad) and mung bean (Mai-2008 and Maash-2008) in selected provinces of Afghanistan in 2012. Posterior means and risks to meet the target productivity levels were compared for the improved packages and the farmer practice and found the former practices superior.