Angular leaf spot (ALS) is one of the most economically important bean diseases in Africa. One promising control option for the disease is the use of mixtures of resistant and susceptible varieties.

This research evaluated (1) the reaction of farmer preferred bean varieties to ALS in the screenhouse and on-station and (2) the effect of different spatial arrangements of resistant and susceptible bean varieties on ALS disease development.

Varietal screening showed significant differences in their reaction to ALS. In the mixture trials, the lowest disease levels and the highest mixture efficiencies in disease management were observed in the combination of equal proportions of the susceptible and resistant varieties when randomly mixed to form an even mixture. We conclude that even mixtures reduce the amount of ALS disease that develops in the crop.