

## Abstract

Weather conditions affect the seed quality of major crops including common bean. This study aimed to evaluate whether seed quality is affected through weather effects on the quality achievable at the end of seed filling (PM) or through changes in quality during maturation drying in the period between PM and harvest maturity (HM). The research also aimed to establish relationships between seed yield and seed quality. Twenty-four common bean (*Phaseolus vulgaris* L.) crops from two cultivars were sown on different dates in Eldoret and Kitui, Kenya. Seed quality was quantified as the percentage of viable seeds determined with a tetrazolium test, and as vigour measured by electrical conductivity (EC). Over the range of weather conditions during our study, high temperatures were more detrimental to seed quality than little rainfall. The two cultivars differed in susceptibility to high temperatures. High temperatures and little rainfall seemed to reduce seed quality mainly through reducing maximum quality attainable during the course of crop development. The quality in general did not change significantly between PM and HM, but in some cases the proportion of viable seeds increased between PM and HM, especially when ambient temperatures were relatively low. For seed samples free from mechanical damage, EC appeared to be an unsuitable criterion to detect quality differences at HM, because in almost all seed lots quality was indiscriminately classified as 'good', whereas viability varied between 69 and 100%. Production conditions leading to low seed yields or seeds of low weight resulted in a low percentage of viable seeds but conditions resulting in fairly high yields or heavy seeds did not guarantee a high percentage of viable seeds.