

**Activity 1. Rehabilitation of food legumes through the management of phosphorus and improved small faba beans Moroccan varieties.**

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Three Moroccan faba bean varieties (V) (*Vicia faba minor*) Alfia 5, Alfia 17 and Alfia 21 were grown under four phosphorus (P) rates (0, 20, 80 and 160 kg P<sub>2</sub>O<sub>5</sub>/ha) in the INRA experiment station of Douyet in Meknes action site. The experimental design was a split plot with four replicates where P was affected to the main plot and variety to the sub plot. Two measurements were taken: the first one at flowering stage to estimate nodulation and biomass production the second one at harvest time to estimate grain yield and evaluate the residual effect of phosphorus treatments.

Statistical analysis showed no significant effect of P, V and V\*P on the nodulation parameters (nodules number and weight), biomass production at flowering and harvest. However, grain yield tended to be affected by P rate variation; but the varieties responded differently (Figure 1). The optimum yield was attained at 80 kg P<sub>2</sub>O<sub>5</sub> /ha by the varieties Alfia 17 and Alfia 15 and at only 20 kg P<sub>2</sub>O<sub>5</sub> /ha by the variety Alfia 21. Alfia 17 was the most productive under all P fertilizer rates. Residual P in the soil at harvest (Figure 2) was significantly increased by the increase of P fertilizer rate for all varieties; this will benefit to the following crop (usually wheat). Fertilization of a crop has to take into consideration the cultural practices of the preceding one to avoid unnecessary applications of fertilizers and reduce cropping costs.

Figure 1: Effect of phosphorus application and small faba bean varieties on grain yield

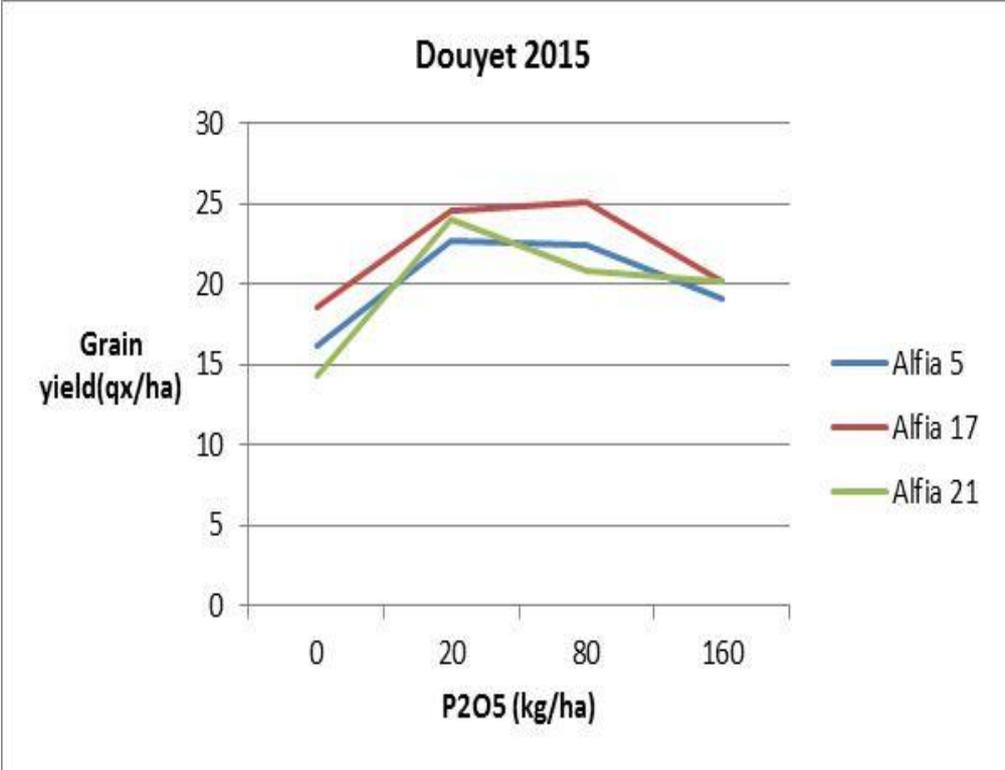


Figure 2. Effect of phosphorus application on residual phosphorus in the soil at harvest of small faba bean

