SESSION 8 – POSTER 147

**Genotypic Variation of Phosphorus Use Efficiency Among Moroccan Faba Bean Varieties (Vicia faba major) Under Rainfed Conditions**

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The use of varieties with high P use efficiency (PUE) should be an alternative to improve both productivity and farm income under erratic conditions where the application of high amounts of P is often not economically justified. The genetic variation of PUE among Moroccan faba bean varieties was studied under different levels of available phosphorus in the soil to provide information regarding adapted varieties. Experiments were conducted under rainfed conditions at the Douyet experimental station (Morroco) in 2000-01 (year 1) and 2002-03 (year 2). Four P treatments (0, 40, 80 and 120 kg P₂O₅ ha⁻¹) combined with four faba bean varieties (G) were tested in a split plot design with P in main plot and G in the subplot. In year 1, the varieties tested were Aguadulce, Defes, Karabiga and Lobah. The same varieties were used in year 2 with the exception of Aguadulce, which was replaced by a determinate genotype with smaller straw production. Results showed that the G effect on PUE was significant in year 1, but not in year 2. In conditions of moderate P availability (year 1), the variety Defes had the highest PUE and grain yield. When P availability was lower (year 2), the highest PUE was reached by Karabiga, but the difference with Defes was not significant. Data also showed that PUE was positively correlated with harvest index (HI) and phosphorus harvest index (PHI).

SESSION 8 – POSTER 148

**Chickpea Breeding for Sustainable Agriculture in Maharashtra State (India)**

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To overcome low yields in chickpea in Maharashtra, a hybridization program was designed to develop high yielding varieties with tolerance to drought; resistance to *Helicoverpa* and Fusarium wilt; irrigation and fertilizer responsiveness; earliness; large seed size; and better nutritional, cooking and milling qualities, and with which to form a good agronomic base. After the first improved variety, Vikas, was released by MPKV (Rahuri) for rainfed cultivated areas, the area under chickpea increased by 16%. Vishwas and PG 12 varieties, suitable for irrigated and fertilized areas, were well accepted by farmers and area, production and productivity increased by 32, 77 and 95 %, respectively, in the state. The major breakthrough in chickpea production was observed after the release of the drought tolerant, wilt resistant, high yielding cultivar Vijay, which is widely adapted for rainfed, irrigated and late sowing situations and tolerant to climate change. After its release, the area under chickpea in the state reached 7.63 x 10⁵ ha with increases in production (31%) and productivity (15%). Vishal, released in 1995, is bold and suitable for table purposes. Substantial achievements have been made with recently released varieties, Digvijay and Rajas, which have medium bold seed, are suitable for rainfed, late sown and irrigated conditions and have high yield potential (40 q/ha). Kabuli cultivars Virat, Vihar, KAK-2, and KRIPA have been developed. Maharashtra achieved a threefold increase (20% /yr) in the total production of chickpea at a 4 % per year increasing rate of productivity.