

Evaluation of Forage Yield and Competition Indices for Intercropped Barley and Legumes

Authors : Abdollah Javanmard, Fariborz Shekari

Abstract : Barley (*Hordeum vulgare* L.), vetch (*Vicia villosa*), and grass pea (*Lathyrus sativus* L.) monocultures as well as mixtures of barley with each of the above legumes, in three seeding ratios (i.e., barley: legume 75:25, 50:50 and 25:75 based on seed numbers) were used to investigate forage yield and competition indices. The results showed that intercropping reduced the dry matter yield of the three component plants, compared with their respective monocrops. The greatest value of total dry matter yield was obtained from barley25-grasspea75 (5.44 t ha⁻¹) mixture, followed by grass pea sole crop (4.99 t ha⁻¹). The total AYL values were positive and greater than 0 in all mixtures, indicating an advantage from intercropping over sole crops. Intercropped barley had a higher relative crowding coefficient (K=1.64) than intercropped legumes (K=1.20), indicating that barley was more competitive than legumes in mixtures. Furthermore, grass pea was more competitive than vetch in mixtures with barley. The highest LER, SPI and MAI were obtained when barley was mixed at a rate of 25% with 75% seed rate of grass pea. It is concluded that intercropping of barley with grass pea has a good potential to improve the performance of forage with high land-use efficiency.

Keywords : forage, grass pea, intercropping, LER, monetary advantage

Conference Title : ICABBBE 2014 : International Conference on Agricultural, Biotechnology, Biological and Biosystems Engineering

Conference Location : Kuala Lumpur, Malaysia

Conference Dates : February 13-14, 2014