B-08: Chilli (*Capsicum annuum*) and red onion (*Allium escalonium*) Intercropping for high monetary returns

S N Jayawardena, R M C Rathnayake
(*Field Crops Research and Development Institute, (FCRDI), Maha Illulppalama*)

Chilli is the most widely grown cash crop during Yala season in the dry zone and it exhibits slow growth during the early stages. Production of chilli in the past few years has been reduced due to the high cost of production and pest problems. Therefore there is a need to develop suitable technology to increase the chilli production. Intercropping is one strategy to increase productivity and reduce the risk. Red onion shows vigorous growth and it matures in 2-2½ months. Agronomic conditions optimal for red onion are also favourable to chilli. An intercropping experiment was conducted with chilli and red onion to find the possibility to increase the yield of chilli.

An experiment was conducted at the FCRDI, Maha Illuppallama, during Yala seasons 1988 and 1989, and its adaptability testing was carried out in farmers fields in Yala 1993 season. Monocrops of red onion (Jaffna local) and chilli (MI-2) and 4 intercrop combinations combined with recommended population (100%) of onion and 25, 50, 75, 100% of the recommended population (100%) of chilli were compared under irrigated conditions. The treatments were arranged in a randomized complete block design with 5 replicates in Yala 1988 and 6 replicates in Yala 1989 season. Adaptive research trials were carried out on non replicated basis with same plot size. Crops were grown on raised beds with the size of 5 x 0.9 x 0.1 m. Recommended spacings were used for monocrops. The intercrop combinations were formed by maintaining the recommended onion population and transplanting 2 rows of 4 weeks old chilli seedlings. Different densities of chilli were obtained by changing the inter row spacing. Both crops were planted simultaneously. Red onion bulbs were harvested after senescence while chilli pods were harvested as they ripen and were sun dried.

There was no significant effect of intercropped chilli at any density on the bulb yield and yield component of onion. However, chilli yield was significantly reduced by intercropping with onion. The average yield reduction in chilli due to intercropping was 55 % when full population of chilli was intercropped with the full population of onion. The highest gross return (Rs.126,546/ha) and Land Equivalent Ratio (LER) (1.52) was obtained from the treatment with onion full population with full population of chilli. LER values indicated around 55% yield advantage due to intercropping. Results of the adaptability testing trials also showed a yield advantage of intercropping over the sole crops.

From these results, it can be concluded that chilli and onion make a good combination of intercropping for higher productivity and financial returns. Among the tested intercropping combinations, the treatment with full population of chilli and full population of onion could be used for best results.