CHAPTER VI

CONCLUSION

Twelve local bitter gourd accessions, accession numbers 1, 3, 5, 6, 7, 8, 10, 11, 12, 13, 16, and 21 were collected from the wild and one cultivar of commercial seed was called Deak bin brand (accession number 20) was used as a standard variety. These accessions and the standard variety were self-pollinated for 3 generations to produce inbred seeds.

The thirteen inbred lines of local bitter gourd accessions were grown in the field to study the differences in botanical characteristics, yield and horticultural characteristics and levels of protein at 30 kDa analysis. Differences in levels of 30 kDa protein in F_1 hybrid seeds were recorded and analyzed. Results obtained in these studies concluded that; leaves of all local bitter gourd accessions were alike. They were circular in leaf shape, open shape of petiole sinus, concave shape of teeth and seven lobes. Base of leaf was cordate, margin of leaf was parted, type of leaf was simple, surface covering was pubescent, arrangement of leaf was alternate and duration of leaf was marcescent. They were two types of apex of leaves; acute and obtuse.

The accessions showed differences in color and size of leaves, size of pistillate and staminate flowers, size of sessile bract, size of fruit, fruit weight/fruit and size of seed. Accession numbers 7 and 10 had number of days to first harvest of fruit yield at the same days of 56 days. Fruit yield showed negative correlations with number of days to 50% female flower, number of days to first harvest and number of node/plant. Number of fruits/plant showed positive correlation with main stem length and number of lateral vines. Fruit weight/fruit showed negative correlation with main stem length and number of lateral vines.

Accession number 7 and 10 gave the highest fruit yields of 2,244 and 2,186 kg/rai, respectively, which were not significantly different. These fruit yields were 60.42 and 59.38% more than control variety, accession number 20. Accession number 13 gave the highest ripe fruit yield and gave the highest seed yield of 1,106 and 134.8 kg/rai, respectively. Its ripe fruit yield and seed yield was 32.88 and 49.11%, respectively more than control variety, accession number 20. When endosperm was weighed and evaluated from 50 gram of seed yield of each accessions.

Accession number 13 which gave the highest ripe fruit yield and seed yield also gave the highest endosperm yield of 61.9 kg/rai. This endosperm yield was 48.95% more than accession number 20. Accession number 13 had number of days to first harvest of ripe fruit of 66 days.

Weight of 30 kDa protein of the accessions ranged from 104.86 to 265.42 µg/5g endosperm. The differences were not significantly different. Accession numbers 16, 10 and 3 gave the highest yield of 30 kDa protein at 265.42, 215.91 and 206.39 µg/5g endosperm, respectively. 30 kDa protein showed positive correlation with partially purified protein and total protein.

Two inbred lines of local bitter gourd, accession numbers 13 and 12 gave the first and second highest seed yield. The two inbred lines, accession numbers 10 and 1 gave the first and second lowest seed yield. Four inbred lines were used as parental lines in diallel crossing. Sixteen crosses of endosperm of F_1 hybrid and parental lines of local bitter gourd were used for extracting and measuring 30 kDa protein. There were significantly different of 30 kDa protein weight among F_1 hybrid and parental lines of local bitter gourd. Weight of 30 kDa protein ranged from 65.65 to 155 µg/5 g endosperm. The parental line accession 10 gave the highest 30 kDa protein weight of 155 µg/5 g endosperm and F_1 hybrid accession 12 × 10 gave the lowest 30 kDa protein weight of 65.65 µg/5 g endosperm. Seed yield among F_1 hybrid and parental lines of local bitter gourd did not correlate with the levels of partially purified protein, total protein and 30 kDa protein. 30 kDa protein in F_1 hybrid and parental lines local bitter gourd showed positive correlation with partially purified protein and total protein.