SUMMARY

The present study was conducted to evaluate scientifically the components of brood food in different castes of honey bee and to determine biochemical changes in the brood food during development of the different castes. Seasonal influences on the biochemical make-up of the brood food were also understood in the commercial honey bee species *Apis mellifera* and *Apis cerana*. Brood food was collected from the different brood cells *i.e.* worker, drone and queen brood cells at different stages of development *viz.* early larva (1-2 day stage), just before capping (5-6 day stage) and after capping (7-8 day stage). Standard biochemical procedures were used to study the brood food samples. SDS-PAGE technique was employed to study the protein profile of the brood food samples. It was observed that the brood food of worker, drone and queen larvae in commercial honey bee species *Apis mellifera* and *Apis cerana* differed with respect to proteins, total carbohydrates, glycogen, glucose, total lipids, cholesterol as tested during the present investigations. Six bands were observed in 5-6 day old larval food of worker and drone whereas 8 bands were obtained in case of queen in *Apis mellifera* during spring. A total 10 bands were separated in 5-6 days old larval food of queen and 9 protein bands were present in case of worker and drone of *Apis cerana* during autumn season. The two honey bees species varied in the relative concentration of different macromolecules in the brood food of worker, drone and queen which was perhaps due to resource partitioning and due to the specific needs of the developing larvae.