

THE IMPACT OF DIFFERENT PRIMING MEDIA ON QUALITY AND PERFORMANCE OF HONEY BEE QUEEN (*Apis cerana*)

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Apis cerana is one of the key species of honeybees and the only species used for beekeeping purposes in Sri Lanka. Lack of sufficient bee colonies is a serious issue for developing the beekeeping sector. Mass rearing of queens using the grafting technique is a viable solution for easy multiplication of colonies. Priming media used during the grafting procedure is the key factor in getting a healthy queen. Therefore, this study aimed to evaluate the impact of five different priming media, viz., diluted royal jelly (1:3), honey pollen mixture, honey, sugar syrup, and distilled water, with a control that did not use any media, on the quality and performance of the queen bee. The experiment was laid out in a complete randomized design using 15 replicates, making a total of ninety samples. Different priming media were applied to commercially available queen cell cups, and those were attached to hive frames. This was followed by introducing one-day-old larvae using sterilized grafting tools, and then the frames with the grafted queen cups were introduced into queenless hives. The results revealed that the worker's acceptance of different priming media was significantly different ($p < 0.05$) among the tested media, with the highest acceptance in diluted royal jelly (46.67%) and the lowest in control (0%). The queen emergence also followed the same trend, having the highest emergence (33.33%) in diluted royal jelly ($p < 0.05$). While no significant differences were noted in body weight, body length, time to egg-laying, or overall colony performance ($p > 0.05$), the egg-laying capacity varied significantly among treatments ($p < 0.05$). Overall, diluted royal jelly proved to be the most effective priming medium for queen rearing in *Apis cerana* using the grafting technique.

Keywords: Grafting, Priming media, Queen rearing, Royal jelly