

SBA MODULE 7 Syllabus Issue 2014

SELECTION AND BREEDING OF HONEYBEES

The Candidate shall be able to:-

- 7.1 give the principles of the selection of breeder queens and drones;
- 7.2 describe a system of record keeping used in the assessment of queens and their progeny;
- 7.3 give a detailed account of methods of queen rearing suitable for a beekeeper with five to ten colonies and methods more suitable for larger scale queen rearing operations;
- 7.4 give an outline account of a method of instrumental insemination and assess the role this technique could play in honeybee breeding;
- 7.5 give a detailed account of methods of queen introduction, the principles underlying the processes involved, the precautions to be taken, and the attendant difficulties in relation to different strains of bee and colony condition;
- 7.6 describe the setting up of mating nuclei and any precautions that need to be taken;
- 7.7 give an account of the subspecies and strains of honeybee commonly used by beekeepers in Europe with particular reference to their appearance and behavioural characteristics;
- 7.8 give an account of the important aspects of the behaviour of honeybees, in relation to breeding programmes;
- 7.9 show an understanding of Mendelian genetics, particularly the inheritance of one gene with two alleles, and the concept of multiple alleles;
- 7.10 give an outline account of inheritance in the honeybee;
- 7.11 describe the genetic basis of sex determination in the honeybee including parthenogenesis;
- 7.12 give an account of mitosis and meiosis showing an understanding of the unusual nature of meiosis in the drone honeybee;
- 7.13 describe in detail the reproductive system of the queen and drone with an outline account of sperm and egg production;
- 7.14 give a detailed account of the mating behaviour of honeybee queens and drones including the roles of pheromones and the concept of drone congregation areas;
- 7.15 describe the causes of drone laying queens and laying workers and ways to recognise the presence of these in a colony;
- 7.16 describe ways of dealing with colonies with laying workers and drone laying queens;
- 7.17 describe the signs of queenlessness and how this may be confirmed;
- 7.18 give a detailed account of methods of marking and clipping queens and the advantages and disadvantages of these practices;
- 7.19 distinguish between queen cells produced under the emergency, supersedure and swarm impulses;
- 7.20 give an account of the problems inherent in cross breeding subspecies of honeybee;
- 7.21 give an account of the advantages and disadvantages of inbreeding and out breeding and how it can be assessed;
- 7.22 give an account of the effect of pathogens and pests on bee breeding