Successful commercial beekeeping

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SUCCESSFUL COMMERCIAL BEE-KEEPING

THE eye of the master fattens the cattle. One of the oldest farming proverbs this is as true of bee-keeping as any other branch of farming. Careful husbandry is the basis of all successful bee-keeping; anything else is secondary.

Proper nutrition is the first requirement. Wherever possible the bees should be on a pollen and honey flow, and the hive never allowed to fall back in strength. The hive field force must be kept "rolling" to maintain production. A hive with a full work force will get the most from any flow, but a colony which has been off a flow for three weeks will take up to three weeks before it completely recovers from the break in the brood raising. A hive which has been off a flow for six weeks or more will often take up to three months to become fully productive again.

The reason for this is to be found in the division of the labour force of the hive, and the reaction of bees to a period of dearth.

Their first reaction is to slow down the laying of the queen. This in turn means that six weeks from the time of the flow cutting out there will be a smaller number of bees emerging from their cells, progressively growing less as the number of nurse bees decreases.

A worker-bee has milk glands in her forehead with which to feed the larvae. When she first emerges from the cocoon, the young worker-bee cleans cells in preparation for the next batch of eggs, then starts to feed the older larvae with honey and pollen, progressively feeding the younger larvae as her milk glands mature. After about three weeks the young worker goes onto other duties.

After she has matured the worker can still feed the larvae, but less efficiently, so a colony with a smaller proportion of nurse bees cannot raise as many larvae as a well balanced hive. It is for this reason that any break in egg laying
means the equivalent break in the nursing population a little more than three weeks later, and three weeks later still a decrease in the foraging population and a continuing effect from the lack of nurse bees showing up in the numbers of bees emerging.

All this means that the hives must be kept up in strength at all times, unless another flow is not likely for some time, or a continuing flow is not available at all.

The secret of success in commercial beekeeping is therefore to keep the bees on a pollen or honey flow consistently the whole year round if possible. A consistent pollen flow is more important than a consistent honey flow, for pollen is required to supply the proteins and other necessary food for the young growing bees.

It is more important to produce honey of any kind than only first grade honey. From this arise four subsidiary but still important factors.

1. **Keep only young queens whose daughters have the genetic make-up to be prolific honey gatherers.**

While it is necessary for the beekeeper to be able to breed his own replacement queens it is extremely doubtful at the present price of queens whether it is economically sound for him to produce his own queens rather than buy them from recognised and reliable queen breeders.

The queen breeder of good reputation is proud of his good name, and besides making sure that he sells only good queens he is constantly trying to improve his breed. Few honey producing bee farmers have the time to pay the same sort of attention to the quality of their breeding stock.

A refinement which helps the beekeeper produce more honey during the honey flow is to keep a number of nuclei always available to requeen hives which show any sign of failing. Any failing hive noticed during the extraction round and immediately reinforced with a nucleus containing a high producing young queen will on the next round be producing as well as any other in the apiary.

2. **The bee-keeper must have a thorough knowledge of honey and pollen flora.**

The successful commercial bee-keeper knows completely the potentialities of every honey plant within 100 miles radius of his home.

He must visit all possible sites every year to keep abreast of the honey flow available, and to plan his moves.

3. **Adequate mechanical equipment is essential.**

His truck controls the number of hives the bee-keeper can run, and this is the most important item of his plant. It must be big enough to allow the apiary to be shifted quickly and efficiently.

The average bee-keeper working on his own can handle three loads of bees easily; four can still be handled but five become a poor proposition because by the time the last load is shifted the flow to which the bees are being moved has often been going for at least 15 days. If the distance shifted is over 250 miles—as is sometimes necessary—the flow can be going for up to 4 weeks before the last load is placed on it. It is then that bee-keepers tend to leave one or two loads of bees in the bush while they extract and care for the loads they have shifted. This not only wastes capital investment, but the bees left on the old site get down in strength and when they can be shifted are quite often no longer producing hives. Therefore a truck which can carry 120 hives is better than a smaller truck which is fully extended carrying 80 hives.

Added to this is the shifting cost factor. If the cost of shifting is £6 a hive using the small truck the cost a hive with the larger truck will be about £4. One man with a small truck cannot comfortably handle more than 240 hives while one man with a larger truck could handle 350 hives.

The other major item is the extracting van. This should be designed to extract all hives in 10 working days. One man should be able to handle the van but it should still be convenient and efficient when used by two men during a heavy flow.

There are many different views on the layout of the interior of the extracting vans. Any bee-keeper should make him-
self familiar with as many extracting vans as possible before he builds or buys.

4. **Material in the hives must be maintained at a high standard.**

The combs are the most important. They must be kept in good condition and free of drone comb if the hive is to remain productive and at full strength. The drone combs should be weeded out at regular intervals. Any frame with more than 25 per cent. drone cells should be melted down.

If the hives are kept constantly on a flow wax moth is not a worry; it becomes an active threat only when the hive dies out and the colony is not inspected for some time.

All these factors make the successful bee farmer and each one is important; each is needed to complete the whole commercial beekeeper.

*Future articles in this series will discuss each of these four major requirements in detail.*

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**CAUTION NEEDED IN ANTIBIOTIC FEEDING OF PIGS**

**Pig** breeders are warned to be cautious in their approach to the use of antibiotics in pig feeding.

Feeding broad spectrum antibiotics has been widely advocated for making young pigs more thrifty and improving growth rates, and low level feeding of antibiotics can indeed be valuable when used carefully where sanitation is not ideal.

But if feeding with these antibiotics is injudicious they can be harmful, warns Chief Veterinary Pathologist, Dr. M. R. Gardiner. A recent case of bowel upset investigated at the Animal Health and Nutrition Laboratories proved to be caused by an imbalance of the intestinal flora, following over-enthusiastic use of antibiotics.

The farmer in question had been troubled by epizootic diarrhoea in his herd for about two years, and despite all treatment it persisted, and even became worse in succeeding litters.

Study of the history of the case suggested the trouble was co-incident with the use of several broad spectrum antibiotics, particularly the tetracycline group.

Intestinal cultures showed that coliform bacilli (organisms common in the gut but normally harmless) were completely resistant to tetracyclines, chloromycetin and erythromycin, but were sensitive to streptomycin. These organisms had become predominant in the gut and there had been a corresponding decrease in other organisms, due to prolonged treatment with antibiotics to which the coliforms had become resistant.

The resulting imbalance of micro-organisms in the gut apparently affected the normal end products of digestion in some way, producing the diarrhoea—and a bad setback to the growth of young pigs. This is in line with overseas reports of coliform organisms developing immunity to broad spectrum antibiotics following misuse of the drugs.

In this case, the owner was advised to switch to a different antibiotic. There was apparently no good reason for his use of broad spectrum antibiotics in the first place, as sanitation was unusually good in his shed.

Unless there is some definite indication that broad spectrum antibiotics are needed they should not be used, says Dr. Gardiner.
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