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PP-510 [Beekeeping for Rural Development]

QUEEN SELECTION CRITERIA ADAPTED TO THE TERRITORY.

HANDLING OF LIVE MATERIAL AND MULTIPLICATION OPTIONS.

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Through more than 20 years as a queen breeder in Argentina I have been selecting and breeding queens adapted to the environment of Buenos Aires province, specifically center area and to the practices management applied by beekeepers to their colonies *(Fig.1)*. Applying mass selection different selection criteria have been considered *(Fig 2)*.

Figure 1
Influence are of our queen rearing company.

Figure 2

In order to evaluate the development of nuclei prepared at the beginning of the season headed by queen cells, mated queens or queen less (including combs with open brood) an assay was developed. Forty five nuclei were prepared and installed containing two brood combs, one with wax foundation and a feeder. Fifteen nuclei were include in each treatment: T1-QL: Queenless nuclei: 15 nuclei were orphan; T2-QC: Queen cells: 15 nuclei where queen cells were introduced; T3-MQ: 15 nuclei where mated queens were introduced. The variables Period (days) until nuclei were placed in a brood chamber, period until the brood chamber was completed and the honey yield were registered in each colony. Cost involved in each treatment was also registered. Results are shown in Table 1.

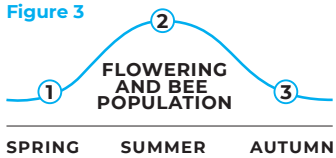
Table 1

	Mated Queen (MQ)	Queen Cell (QC)	Queen Less (QL)
Nucleis	15	15	15
Finished the test	15	13	8
Effectiveness	100%	86%	53%
Honey yield Kg. per hive	32	27	23,6
Kg. lost per hive		5 Kg per hive	8,4 Kg per hive
Total Kg. lost in %		-27%	-61%
Loss of money with respect to MQ (%)		-22%	-50%
Missing queen laying days	3=6.000 bees	15 = 30.000 bees	28 = 56.000 bees

Nuclei headed by mated queens (MQ) developed faster and had better honey yield, followed by the queen cell treatment (QC). The queen less nuclei not only developed slower but also many nuclei were lost. The results indicate that the investment in these beekeeping inputs is highly convenient.

In our area of influence, where we sell our queens and queen cells, the weather at the beginning of the season is highly variable, so many beekeepers choose to make nuclei later to obtain better results. After many years, our recommendations can be summarized in the following figure *(Fig 3)*.

Figure 3



Always remember to order mated queens or queen cells well in advanced. We are working with live material and must respect their biological cycle.

1. BEGINNING OF THE SEASON

We have all the season to develop and correct problems with queen. We can harvest them and recover the investment in live material. They're a good option for replacing dead hives during the winter or increasing their numbers. You can make them with mated queens or queen cells.

2. IN THE MIDDLE OF THE SEASON

They are an alternative for replacing queens at the end of the season or expanding the number of hives. You can do them with only cells, since there are good conditions for fertilization. We have brood available in all hives and we easily obtain mated queens or queen cells.

3. END OF THE SEASON

Ideal for replacing dead hives in the next season or performing an early queen replacement. It is recommended to do so with mated queens. We have brood available, the queen will have little laying time and will start almost new next spring.

PP-510 [Beekeeping for Rural Development]
Queen selection criteria adapted to the territory. Handling of live material and multiplication options

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- Do you know the biological cycle of bees?
- Do you know how much you gain or lose using mated queens, queen cells or letting your bees make their own queen?
- Do you have knowledge about the genetics that best adapt to your area?

Through more than 20 years as a queen breeder I have seen that in Argentina, we beekeepers have been changing the management of our apiaries and the environment has also changed.
That is why, through selection work, I went in search of a genetic line that adapts to the area where our hives are established.
In this work what is demonstrated is that, starting from certain points to take into account, such as productivity, hygienic behavior, tameness, winter and spring development; We select a phenotype that best adapts to our territory.
It must be taken into account that since Argentina is such a large territory and has different climates, this is very important, since it will give us better results. Also this work, what it aims is for beekeepers to know the biological cycle of bees and from there they can plan the tasks to be carried out at each moment of the year, focused in this case on the multiplication of the apiary and replacement of queens. For this, what is shown are the times needed to organize and place orders for queen cells or mated queens that will allow us to make a new colony or change an old queen, knowing that it cannot be done from one moment to the next. In a timeline we see the days required from when the cells or queens are ordered, introduction into the nucs, birth and beginning of lay. Finally, there are known results of losses and gains of making nucs with mated queens, queen cells or letting the bees make their own queen. Demonstrating with numbers and percentages which is the best option.