POLLINATION OF ALFALFA CROPS BY BEES: AN IMPORTANT CONTRIBUTION TO SOLVING THE PROBLEM OF SEED SHORTAGE

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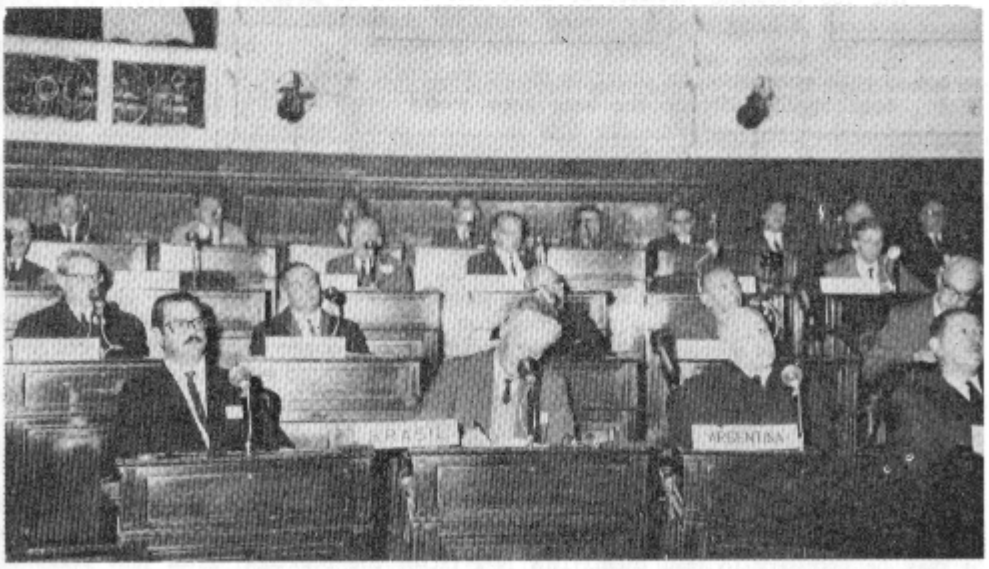
In order to steadily keep the 7 million hectares under alfalfa — in single or combined crops — in this country, at least one and a half million hectares must be re-sown annually, which means that 12—15 million kg of seed are necessary annually.

By multiplying the above figure by 600 old pesos, the cost of one kg of seed when bought from the producer, the figure obtained is amazing; whether we consider the cost in the last season, the figure is astronomical namely approximately 10 thousand million pesos.

There exists a well-grounded reason for the cost mentioned above: shortage of seeds; and another, even more serious one, which entails shortage of seeds: the fact that they are produced at random, just as 50 years ago when seeds were not in such a great demand because alfalfa crops lasted for several years, pests did not exist, and fertilization did not raise problems.

At present, we are not allowed to stay and wait only for the environmental conditions to help us: rains at the right time and the pollinating insects, in order to obtain 50—100 or 150 kg seed per hectare, or may be something more in irrigated areas. The more so as now we need seed from selected varieties, resistant to pests, available at very high prices.

Some years ago I had the opportunity to know the Experimental Station at La Platina near Santiago de Chile, and the work of my Chilean colleague farming engineer Luis Susaeta — a contributor to "Gaceta del Colmenar" — who is concerned only



During the first Apicultural Congress in Latin America, held in Buenos Aires, 1968. In the first row — Mr. O. Schwint Escalante, representative of Argentina, and in the second row — Mr. M. Katzenelson

with the study of pollination of alfalfa crops by bees. I also had the possibility to visit — at Curacavi, on the way to Valparaiso — the farm of Mr. Alfonso Baldrich, a Chilean expert producer who obtains top-quality seeds from his alfalfa crops thanks to the 10 colonies per hectare that he hires from beekeeper Juan Poch.

During a recent visit to Argentina, Mr. Baldrich told me that now he hires 3,000 colonies every season, to pollinate his 300 hectares of alfalfa crops, and pays $ 10 for each colony.

He sows seed of selected varieties in rows at least 1 m from one another, supplying them the necessary humidity and destroying all weeds. And so, with pollination by bees, he obtains peak crops of thousands kg of seed per hectare ; the top quality of seeds has made them be in great demand by other producers both in Chile and abroad.

I have read in other articles published in "Gaceta del Colmenar" that in the USA the use of bees as pollinators of alfalfa is so highly specialized that recently bee lines have been developed which trip only alfalfa flowers, the interference of other competitive species being thus avoided (especially thistle).

Moreover, practical evidences exist that the seeds resulted from the flowers pollinated by bees spring better and the embryos are stronger.

As long as no herbicide was used, numerous natural pollinators of alfalfa existed, namely the insects which were looking for pollen to feed their offsprings and concomitantly transferred the tiny grains which "stuck" to them from one flower to another, of the same crop.

These natural pollinators, with special preference for alfalfa flowers, have gradually dissappeared, in step with the progress. At present, many pests exist and also many substances to kill them ; they kill the pests but also the useful insects.

Under these conditions, people resort to the bee, the only insect which can be reared anywhere honey plants exist, which can be reared without limit in terms or quantity, and can be moved when needed, to any region of the world where alfalfa crops are cultivated. As far as we know, the bee is the only insect capable to adapt itself to any environmental conditions.

Coming back to the figure mentioned above — the 12—15 million kg of alfalfa seed necessary yearly — we note that it would be safer and more economical to obtain this quantity from 10—15 thousand hectares under efficiently cultivated and pollinated alfalfa crops than leaving them grow at random on the 100—150 thousand hectares as they do now.

The 100 thousand hectares or more left could be used as pastures or as forage source in stead of being used for several weeks for seed crops.

The experience up to now in terms of pollination by bees brings to the fore several essential conditions in order to obtain successful results in this respect, this method having been applied already for long time world over, but being, unfortunately only incipient in these regions.

They are :

— Use of strong bee colonies, hived in more than one hive body, with vigorously laying queens ;

— Each hive must have more than 5 frames with eggs and larvae in order to secure "pollen hunger" ;

— The moving of hives to the field to be pollinated when alfalfa is in full bloom, never before. The bees are thus prevented from collecting pollen and nectar from flowers of other competitive species. Taken by surprise at the necessary moment, they will forage — for several days — only the flowers close to their hives and will accomplish their task ;

— Distribution of hives in groups not more than 150 m far from one another, securing 6—7 strong hives per hectare ;

— The guarantee on the part of the alfalfa producer that he will not apply any herbicide during the period of time when the bees "perform their pollinating service".

It stands to reason that given the great number of bee colonies per hectare, the bees may not manage to obtain enough honey from the nectar gathered by them ; it may be necessary to feed them. This is a factor the beekeeper must take account of when establishing the fee in which also included must be the cost of the previous preparation of the colony, the transport charges, as well as an amount representing the profit.