

THE INFLUENCE OF DROUGHT OF 2012 IN BEEKEEPING OF RIO GRANDE DO NORTE, BRAZIL.

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Beekeeping in all territory of Brazil today is based only in the poly-hybrid Africanized Honey Bee (*Apis mellifera* L.). Today exactly 57 years after the introduction in 1956 of the African bees, *Apis mellifera scutellata*, by Prof. Warwick E.Kerr and due to the Africanization of the bees in the apiaries and in nature, Brazil only has the Africanized poly-hybrid, which is the result of the crossings between African and European bees, which we currently denominate Africanized Honey Bees or AHB. The domination by the subspecies *scutellata* over the other subspecies of *Apis mellifera* previously introduced by European settlers in Brazil was completely unexpected. This is one of the most remarkable examples of dominion by a subspecies among nature's animals that are exploited by man. Since 1956 until today we can see that significant changes and improvement were made in Brazilian beekeeping. Though this country has much to improve in terms of mechanization and organization of apiculture, we can say that it was a considerable beekeeping progress from agribusiness as well as technological and social viewpoints. Currently, the Brazilian honey production is over 50 thousand tons a year, with special emphasis towards organic honey. Brazil is among the ten greatest producers in the world in honey production, with over 350 thousand beekeepers and over 2 million colonies of honeybees. Within Brazil beekeeping in Northeast developed significantly in the last 20 years, independently of the frequent droughts that occurs every year in the semiarid region and the exceptional year of 2012 which presented one of the worst drought of the last 50 years. Today this region account for 30% of Brazilian honey exports because of the rich natural flora, with large regions that do not sustain agriculture and therefore are free of pesticide contamination. Since Africanized bees are resistant to brood diseases and to the mite *Varroa destructor*, the Northeast beekeepers do not treat their bee colonies with acaricides and produces considerable amount of honey (about 15.000 tons/year), especially organic honey. This has increased year by year, so that currently the Northeast is considered to have one of the greatest potentials in the country. Now considering specifically the semiarid Northeast region which covers 12% of the Brazilian territory, between late 2011 and 2012 this region presented the worst drought in 50 years, considered a social disaster of irreparable consequences. According to informations of the National Civil Defense, the

states of PI, PE, CE and RN accounted for, during the period of drought in 2012, over 900 municipalities in emergency situation. The climatic instability of the semiarid region of Northeast, due the lack of water resulted in irreparable agriculture losses of crops as maize and beans which are totally dependently on rainfall. Thus, in the 9 states of Northeast many farmers lost about 82% of their bee colonies and almost 70% to 100 % of their livestock, except some owners who provided plants typical of the semiarid region as the variety of cactus adapted to that climatic region, a xerophyle plant, the mandacaru (*Cereus jamacaru*), as the last alternative to feeding cattle. In Rio Grande do Norte beekeepers and small producers reported in 2012 losses of 70% to 90% of their bee colonies and farmers have lost almost all their herds of cattle and goats. According to Valdemar Belchior Fo.(Globe report of July 12, 2013) farmers reported also large losses in the state of Rio Grande do Norte, with exception of just a few small goat producers who lived in another reality after joining the program called “Bank of protein alternative for breeders of goats and sheeps” created in Apodi-RN by the micro-enterprise Sebrae. In this program the producers were induced to feed their herds with a special pie prepared with a combination of plants adapted to dry climate of the region, rich in protein, such as leucaena (*Leucaena leucocephala*), flower silk (*Schlumbergera truncata*), moringa or white acacia (*Moringa oleifera*) and palma forage used to feed livestock. Alongside this program, and the problems of drought that occurs every year in the semiarid region of Northeast, lately other proposals has been recommended to support the periods of drought. Thus, in the last ten years an important strategy is being recommended to the semiarid regions for capture and storage of rainwater , the instalation of more than 500 million tanks (cisternas) for a better coexistence with the droughts. On the other hand, in the case of the farmers, the best adaptation is the replacement of cattle, which is practically impossible to maintain during the typical drought of the region, by the investment in sheeps and goats. According to Valeria Landini ,coordinator of the “Chapada do Araripe” of Pernambuco (Globo Rural report of August 2013), the ox needs about 20 times more water than the goat, information that support the investment in sheeps and goats in the semiarid region of Northeast. In Rio Grande do Norte there are 8.500 beekeepers, 170.000 beehives and the average annual honey production is between 2.000 and 3.000 tons. Now, considering the consequences of the 2012 drought in beekeeping of Rio Grande do Norte, many beekeepers lost up to 90% of their bee colonies (due absconding or abandonment, pillage, diseases, absence of food and water, usw) and there was no honey production neither honey exportation in 2012. Eighty six percent of the municipalities of Rio Grande do Norte (143 out of 167 municipalities) had severe emergency situation due low precipitation (199 mm in 2012; 963 mm in 2011) and lack of water in several dams, causing deaths of animals (cattle, goats, sheeps, fish, bees usw). Thus, based on the above data we conclude that 2012, due to the strong drought which caused irreparable

economic damage to the farmers and beekeepers, was one of the worst years for agriculture and beekeeping agribusiness of Rio Grande do Norte.-