

Project Update: December 2019

After my last update, I continued to observe the development of the tomatoes until September 4th 2019, when the experiment was finished. The fruits started to be harvested on August 21st, when the development was considered complete and as the farmers would send them for sale - mostly red (Fig. 1). When the fruits get totally red, they would be weight, measured (Fig. 3) and have seeds counted (Fig. 2) and prepare to the germination experiment. Of the 40 flowers marked of each treatment, we harvested 11 tomatoes pollinated by auto pollination outside the greenhouse, 13 tomatoes pollinated by auto pollination inside the greenhouse, 12 tomatoes pollinated by natural pollinator outside the greenhouse and 15 tomatoes pollinated by *Melipona quadrifasciata* inside the greenhouse.



Fig 1.



Fig 2.



Fig 3.

On August 30th 2019, the hives used at the introduction were taken back to the Melipona. Since that, all the hives continued to have the same management (feed with a supplement of honey, water and sugar every 15 days and have any necessary actions for the management of the hives carried out).

The identification of material collected with the pan trap experiments and by occasional collections was finished in partnership with The Insect Systematics Laboratory of the Federal University of Minas Gerais on Belo Horizonte on November 6th 2019. More than 30 species could be identified (Fig. 4) and this information will be used to produce a field guide.

After the seed count, they were prepared for the germination experiment. This preparation consists on let the seeds ferment between 54 and 72 hours (Fig. 7), wash them to remove all the tomato pulp, dry them completely (Fig. 6) and store them in a suitable container (Fig. 5). Once all seeds have gone through this process, the germination experiment could be started (Fig. 8). It was carried out in partnership with The Center for Ecological Synthesis and Conservation of the Federal University of Minas Gerais on Belo Horizonte. The seeds were placed in petri dishes on a double layer of filter paper, hydrated with antifungal solution (0.1% nystatin) and water and stored in

an incubator at 25° C with a 12 h photoperiod. Developmental monitoring was performed daily for 21 days, from October 28th to November 18th.

Fig 4.

Fig 5.

Fig 6.

Fig 7.



Fig 8.



Fig 9.

Two more communication actions were made. One on September 4th 2019, in Ibirité-MG at The State University of Minas Gerais, during the 6th Biological Science Week while I co-taught the mini course "Conservation, agriculture and the bee colony collapse disorder" (Fig. 9). The other was in Belo Horizonte-MG at The Methodist University Center Izabela Hendrix, during the XXV Academic Day Biology Izabela

Hendrix while attending the round table "Conservation and Citizenship: a partnership that works!" with the lecture "The importance of bees for agriculture" (Fig. 10).



Fig 10.