**Material and Methods**

- The parasitoid population was obtained from parasitized pupae of DBM collected in cabbage crop (Brassica oleracea var. capitata) in Faye Boye, in the "Niajes" area, situated in North West of Senegal. The population of DBM is native to the same locality.
- The rearing of the host and its parasitoid were conducted in climate rooms with the following conditions: 25 °C temperature, 60% relative humidity and 12L/12D photoperiod.
- Traits such as development stage, reproductive mode, host age preference, foraging behaviour of the female were assessed. All tests performed in this study were realized in the laboratory of Entomology for International Cooperation in Agronomic Research for Development Center (CIRAD) in Montpellier (France).
- All data were analyzed with the software StatView 4.55.

**Results**

- The duration of the larval stage is between 4 and 7 days. The pupal stage during 7 days. In our study conditions, the development time from egg to adult is 15 days. (Table 1)
- Parasitism rate was significantly different between unmated and mated females (t = 6.39, df = 6, P = 0.0007). The mated females produced normal sexual offspring (male and female) while unmated females have produced only males. (Table 2)
- The parasitism rate varies significantly with age of the host (F = 26.23, df = 4,16, P < 0.0001). This rate is significantly higher at the L4 larval stages. (Table 3)
- The parasitism rate was significantly different in the three laying-boxes (F = 15.87, df = 2,18, P <0.0001). Male offspring number was significantly different among the three laying-boxes (F = 5.87, df = 2,18, P = 0.008). Female offspring number was significantly different among the three laying-boxes (F = 10, df = 2,18, P = 0.001). The offspring development time was significantly different between the laying-boxes (F = 9.01, df = 2,18, P = 0.004). (Table 4)

**Conclusion**

- The O. sokolowski life cycle lasted 15 days. The parasitism rate is significantly different between mated and unmated females which imply that mating stimulates the behaviour of parasitism. Females can parasitize all larval stages including prepupae of DBM. However, the parasitism rate was higher in the fourth larval stages. The host-seeking behaviour is influenced by volume.
- The results presented in this study provide valuable information on some O. sokolowski life traits history, a major natural enemies of DBM, pest of Brassicaceae. This information can help a better understanding on the biology of this species and allow more efficient use of this parasitoid in the programs of population management of DBM in the release of entomophagous.