Abstract ID 79

Rearing *Fopius arisanus* (Hymenoptera: Braconidae) on Irradiated Eggs of *Ceratitis capitata*

Beatriz PARANHOS

Embrapa Semiárido, Petrolina, Brazil, Email: *beatriz.paranhos@embrapa.br*

Background: One of the tools to suppress or eradicate the carambola fruit fly, *Bactrocera carambolae*, which is restricted to the northern region of Brazil, is the use of parasitoids. However, the Brazilian native parasitoids do not attack this fruit fly. In this way, *Fopius arisanus*, which attacks eggs and young larvae of the genera *Bactrocera* and *Ceratitis*, was imported. This parasitoid must be multiplied on *C. capitata* to be sent to Amapa State, northern Brazil, which is free of *C. capitata*. Thus, to send parasitized pupae to that place, free of host pest, it would be necessary to irradiate the host before exposing it to parasitism.

Methodology: For this, studies were carried out at Moscamed Facility in Juazeiro-BA, northeastern Brazil, to determine the doses of X-rays that should be applied to egg-hosts, according to their age, in order to obtain higher yields and parasitism rates. The ages tested were 24, 30, 36 and 40 hours of incubation of *C. capitata* eggs, irradiated with doses of 2.5, 7.5, 10 and 12.5 Gy, respectively. For all experiments each repetition was a cage with 10 couples of *F. arisanus*, 10 to 20 days old, with previous experience in parasitism and fed ad libitum with honey and water. The host eggs were offered on soft paper in blocks of agar-water (7%), which were put in the upper screen on the outside of the cage, through which the females could parasitize the eggs, for 24 h.

Results: The irradiation of 24 h old eggs presented negative effects in all evaluated parameters, compared to the non-irradiated ones. After 30 h of incubation, *C. capitata* eggs can be irradiated to avoid pest emergence without negatively affecting egg-pupal yield and parasitism rate by *F. arisanus*. Among the evaluated egg ages, the highest yields were in eggs of 40 h (0.56 ± 0.04) and 30 h (0.55 ± 0.07), higher than those found in eggs of 36 h (0.36 ± 0.04) and 24 h (0.15 ± 0.07) ($F = 10.65$, $P < 0.001$).

The parasitism rate ranged from 58 to 75% between eggs of 24 and 40 h, respectively, but there was no difference between the ages studied ($F = 2.27$, $P < 0.133$). On the other hand, the number of adults obtained was different and superior with eggs of 40 h (95.25 ± 7.06), followed by 36 h (54.42 ± 6.48) and 30 h (51.25 ± 11.26), which were similar and larger than with 24 h eggs (12.45 ± 4.82) ($F = 11.11$, $P < 0.001$). The number of females obtained followed the same pattern as that of adults. It was found that eggs of 40 h generated twice as many females as eggs of 36 and 30 h, and seven times more females than 24 h eggs.

Conclusion: Studies have shown that the best age of *C. capitata* eggs to be irradiated with X-rays and parasitized by *F. arisanus* is 40 h, as it gave the highest pupal yield with a higher female bias.