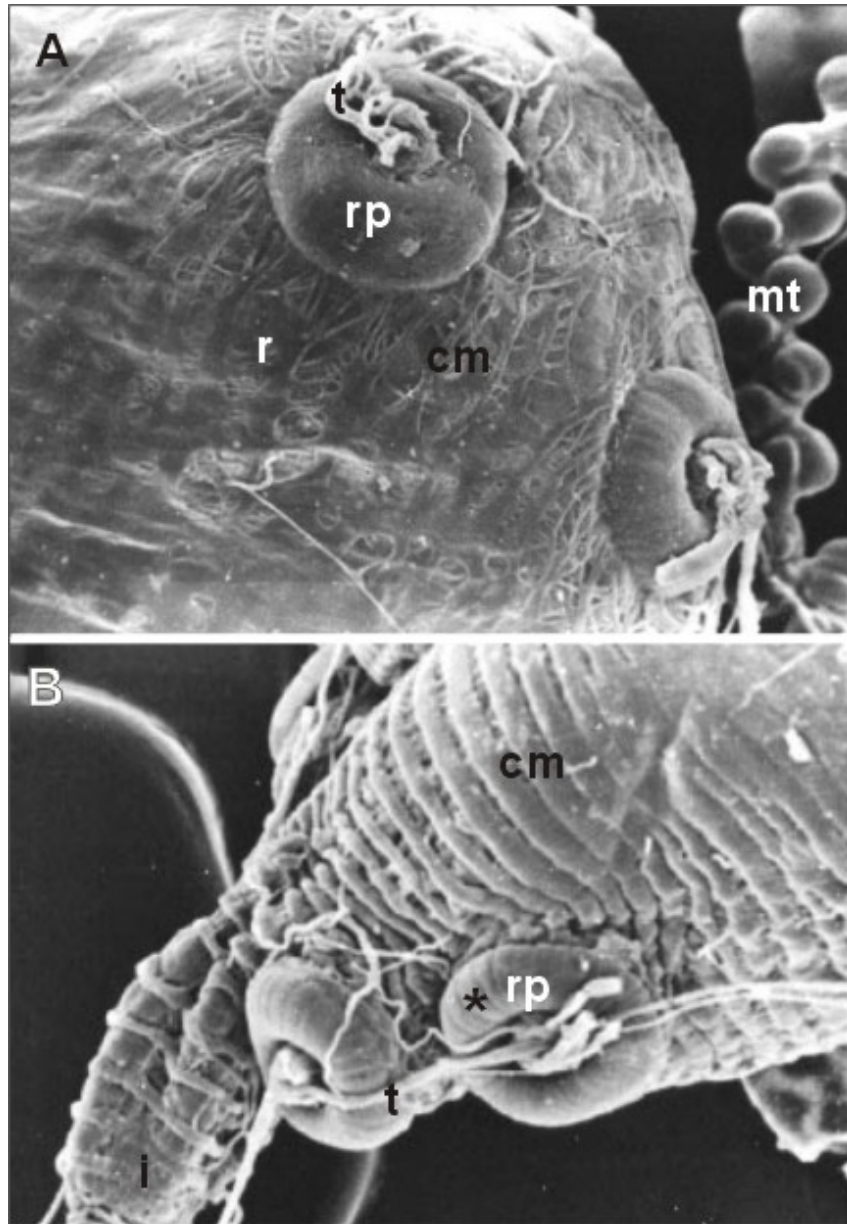


**THE RECTUM AND RECTAL PADS OF *Anastrepha fraterculus* AND *Ceratitis capitata* (DIPTERA: TEPHRITIDAE).** Caetano, F.H.(1); Solferini, V (2); Zara, F.J(3); Silva Lins, D.B (2); Aluani, T (2) and Garcia de Brito,V.L (2). (1) Universidade Estadual Paulista (UNESP), Depto. Biologia – P.O.Box 199, 13506-900, Rio Claro, SP, Brasil. (2 ) Universidade Estadualde Campinas, Depto. de Genética e Evolução Cidade Universitária Campinas- SP (3)Universidade Estadual Paulista (UNESP), Campus do Litoral Paulista, 11330-205, São Vicente, SP, Brazil. E-mail: fcaetano@rc.unesp.br

Flies of Tephritidae (Diptera) family lay the eggs on fresh vegetal tissues, where the larvae develop. *A.fraterculus* and *C.capitata* larvae feed on fruits of economic importance, causing damage in fruit pulp and being a problem to fruit culture. The adult flies feed on plant exudates or suck the juices of damaged fruits, usually much diluted liquids. The food is storage in the crop and is then regurgitate in many small droplets on the substrate. After a while, the flies start to re-ingest these droplets, repeating this procedure a few times. This behavior is believed to promote concentration of the food by drying some of its water content, what may be compared to the honey production. Insects whose diet have a high water content, usually present many and large rectal pads [1,2]. Both *A.fraterculus* and *C.capitata* have four rectal pads, located at the initial portion of the rectum [3]. The digestive tracts of an adult male and a female of *Anastrepha fraterculus* and a female of *Ceratitis capitata* were removed in insect Ringher and fixed in aqueous Bouin for two hours. After this, they were processed by the SEM routine in the EM Laboratory - Biology Dept of UNESP – Rio Claro - SP. The four rectal pads are distributed in two pairs, located at opposite sides of the rectal wall. In both species, each rectal pad is rounded, with a central concavity where a trachea trunk penetrates. Trachea trunks connect the two rectal pads of the same side. The rectal wall of the *C. capitata* is covered by a conspicuous and strong circular muscle sheath. In *A.fraterculus* the muscle sheath is conspicuous but flattened. In *A.fraterculus* the rectal pads of male and female are of the same size, and much bigger than the rectal pads of *C.capitata* female. This difference may be related to the different sizes of the insects, once *A.fraterculus* is larger than *C.capitata*. Although we cannot explain the differences of the circular muscle sheath of both species, we suppose that the strong muscle of *C.capitata* has a role in feces elimination. In *A.fraterculus*, the recto annuli connection presents a well developed circular muscle, which may be related to feces expulsion and, in the same way, to oviposition. In *C.capitata* we cannot detect this feature and we suppose that the strong circular muscle sheath of rectum helps in laying the eggs.

### References

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**Figure 1** A- *Anastrepha fraterculus* and B *Ceratitidis capitata*. The rectum (r) presents a conspicuous circular muscle (cm). This muscle is more evident in *Ceratitidis* than in *Anastrepha*. In both species the rectal pads (rp) are in the proximal region and receive a strong branch of the tracheal system (t). As you can see the rectal pads of *Ceratitidis* is more rugous (\*) than the *Anastrepha* ones. mt = Malpighian tubules. Magnification 200X