



# PREPARING THE WAY FOR COMING AW-IPM PROJECTS AGAINST THE NEW WORLD SCREWORM, *COCHLIOMYIA HOMINIVORAX*, IN BRAZIL AND MERCOSUR.

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## INTRODUCTION

Since the 1950's, the AW-IPM programs integrating the SIT against the New World Screwworm (NWS), *Cochliomyia hominivorax* (Diptera: Calliphoridae), have been successful.

The NWS was eradicated from the USA, Central America to Panama, but in most tropical regions of Latin America (excluding Chile), the NWS is still a serious threat to livestock. There is a raising interest for its suppression in South America.

Between January and May 2009, a pilot-project, supported by the BID and COMEXA (Comisión México-Americana para la Erradicación del Gusano Barrenador del Ganado), was performed at the Brazil-Uruguay border. As the results were positive, novel regional AW-IPM projects can be planned now.

To set a mass-rearing center based in South America is strategic when considering long-term programs. The CENA/USP has a pilot-facility, built by the Agriculture Ministry and supported by FAO/IAEA, which serves to give technical support to SIT projects adopted by the government. In partnership with the Biofactory MOSCAMED Brazil (BMB), a project to produce sterile NWS started on 2009.

## METHODS

The project aims to maintain a colony of a regional NWS strain, to develop a mass-rearing system and a sterilization protocol by X rays, and to study the sterility induction in regional strains.

So far, a colony has been successfully established. The parental generation came from UNICAMP pupae (originally from Goiás State, Central Brazil). The adults are kept in cages (90 x 145 x75 cm) and fed on a diet (honey and spray dried egg). The oviposition substrate is a mix of larval diet disposal and blood.

The larvae grow in a medium made of spray dried blood, spray dried egg, milk, sodium citrate, citric acid, water, formalin and ground meat (7%: 2%: 1%: 0.1%: 0.1%: 100%: 0.1%: 70% (w/v)).

On the 5<sup>th</sup> day, larvae pupate in vermiculite. The colony is maintained at controlled rooms (38±1°C; 60±10% RH).

## RESULTS

The colony has been reared for 9 generations. Egg hatch has been of 70±10%.

From G<sub>1</sub> to G<sub>9</sub>, the total amount of pupae produced was about 14 L (~ 116,200 pupae). The mean adult emergence and sex ratio (♀/♂+♀) were 86.7±3% and 0.59±0.08 respectively. The mean pupal weight was 47.1±1.7 mg (5<sup>th</sup> day).

Currently, only 2 L pupae/generation is produced (cost ~ US\$ 35.00), what is enough to conduct the rearing and sterilization bioassays. Tests to eliminate the meat from the larval diet and to introduce local bulk agents (as sugarcane bagasse and coconut fiber) are underway and will decrease the rearing cost.

Field tests using the *Swormlure-4* as attractant to determine the distribution and densities of NWS populations are also underway. Three pilot-areas are being prepared in Bahia state and suppression activities are expected for 2011.

## CONCLUSION

This NWS colony is being transferred to the Biofactory MOSCAMED Brazil to attend coming SIT projects in MERCOSUR.



Figures 1 and 2. Colony cage (90 x 145 x75 cm) with adults and cages for the bioassays.



Figures 3 to 5. Larvae start feeding on small plastic containers with larval diet and on the 2<sup>nd</sup> day are transferred to trays.



Figures 6 to 8. Larvae pupate on grinded vermiculite, the temperature and humidity in trays are kept at 38±1°C and 60±10%, and on the 3<sup>rd</sup> day after pupation, pupae are separated.



Figures 9 and 10. Traps with *Swormlure-4* as attractant.

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