## TIF (Totally Impermeable Film): An Innovative Film for Mulch, Broadcast Fumigation, and Greenhouses in Agriculture.

15<sup>th</sup> Annual International Research Conference on MBr Alternatives & Emissions Reductions. November 11-14, 2008

Marcello D. Villahoz\*, Freddie Garza^, Paul Barrows\* and Maria Sanjurjo\*
\*Department of T&D, Mitsui Plastics, Inc. Atlanta, GA 30339.
^ Technical Manager, Admer Division, Mitsui Chemicals of America, Rye Brook, NY 10573

The phase out of Methyl Bromide (MB) has resulted in many international groups attempting to find innovative, and effective, systems for pest control in agriculture. Additionally, there is a definite need to discover a means of avoiding the evaporation and emission of MB gases and other pesticides into the atmosphere.

Our plan has been to develop Totally Impermeable Film (TIF),a new film that end-users would find highly convenient to avoid the emission of harmful gases caused by pesticides, not to mention reduce the concentrations of these pesticides currently in use.

TIF's structrure is based on proprietary technology that contains (EVAL™), a special grade of ethylene vinyl alcohol copolymer, which is combined with a tie resin (ADMER™), a modified polyolefin with a functional group that promotes the adhesion to various materials. This adhesion is obtained due to the advanced anhydride grafting technology, which creates thermal stability equivalent to that of common polyethylene (PE).

The advantages of this structure has allowed the development of the TIF project, which is to increase fumigant retention, boost weed control and improve crop yields in broadcast fumigation and in mulch applications. The commercial applications of TIF in different countries will be reviewed and evaluated, along with the resultant reduction of fumigants applications and decrease of emission of pesticide gases into the environment.