The Insect Free Post

Newsletter of the
CORESTA Subgroup on Pest and Sanitation Management in Stored Tobacco
Issue 2 – April 2010

Subgroup objectives:
To share information on methods to control pests in stored tobacco.
To conduct collaborative studies on pest control and sanitation practices for tobacco in storage.
To investigate new technologies and issues related to infestation control methods.

LET US INTRODUCE OURSELVES

The CORESTA Subgroup on Pest and Sanitation Management in Stored Tobacco is a subgroup of the CORESTA Phytopathology Study Group.

The subgroup currently comprises 18 members from 15 companies including Alliance One International**,** British American Tobacco, Degesch America, ECO2, Fera, Franz Rappl GmbH, Gallaher Limited (JTI Group), Imperial Tobacco Reemtsma, Industrial Fumigant Company, Japan Tobacco, JTI Germany, Lorillard, R.J. Reynolds, Tabaknatie N.V., Universal Leaf.




MEETING REPORT

This year's Infestation Control Conference (ICC) was held in Kunming, CHINA on 21-22 April 2010. Around 116 delegates attended from many organisations in China (including the government bodies), Indonesia, Turkey, Uganda, Philippines and Cambodia. It was hosted by Universal Leaf Tobacco Company.

The Subgroup met for 2 days following the ICC. This meeting was shorter than usual as many Subgroup members were unable to attend because of the disruption caused by the Icelandic ash cloud.

The meeting was, nevertheless, constructive covering a range of important topics including: communication of the Subgroup's activities, improvements in training and educational materials, new chemical and non-chemical control tools, phosphine fumigation issues (resistance and yellow residue), and controlled atmospheres.

Guest speakers from ProvisionGard and Bayer presented new technologies in the form of (patented) insecticide printed cases and impregnated nets, respectively.

The next Subgroup meeting, including an ICC, has been proposed for April 2011 in South Africa, hosted by BAT.

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Another aspect of the meeting was to review the activities of 2009. Subgroup presentations were given at the Smoke Science/Product Technology and Agronomy/Phytopathology Joint Study Group meetings. CORESTA Guide No. 2 (fumigation) was updated and a new CORESTA Guide No. 9 (freezing) was created. Fumigation and Controlled Atmoshpere research were conducted.

HEADLINES

Phosphine Resistance is defined as a heritable change in the sensitivity of a pest population where individuals are able to tolerate amounts of phosphine normally lethal to the majority of individuals of the same species. This is reflected in the repeated failure to achieve the expected level of control when used according to the label recommendation. Resistance presents a real threat to pest management.

To prevent it from developing: Avoid sublethal doses, insufficient time, low temperature effects, and inadequate sealing; Ensure proper monitoring, maintain concentrations for the proper amount of time, fumigate only when beetle activity warrants, and thoroughly seal.

If you suspect resistance, testing can be done to confirm this. You may wish to report it to your Subgroup contact. If you have resistant strains you should consider using the new CORESTA standards for phosphine or freezing.

Controlled Atmospheres (CA)

In controlled / modified atmosphere treatments, an environment is created which is lethal to pest insects by altering the normal proportions of carbon dioxide (CO_2 – 0.04%), oxygen (O_2 – 21%) and nitrogen (N_2 – 78%) in the treated space.

CA works by causing acidification and disruption of energy metabolism at the cellular level producing toxic effects. CO_2 also acts as a growth suppressant in insects and micro-organisms. Atmospheres with a low O_2 concentration produce hyperventilation, asphyxiation, paralysis of the nervous system and collapse of the trachea in insects. An increase in temperature produces an increase in insect respiration and therefore enhances the effect of the gas.

There are a number of reasons to pursue CA including no residues in the product, increasing incidences of phosphine resistance, more tools preserve current tools, and possible future restrictions on the use of phosphine. A subgroup taskforce is currently developing a new standard for Controlled Atmosphere treatments.

For more details on any of the subjects covered in this newsletter please contact your local CORESTA Subgroup representative.
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