



June 06, 2007

MEMORANDUM CIRCULAR

No. 04
Series of 2007

Subject: Revised Procedural Guidelines and Templates for Bt Corn Insect Resistance Management (IRM) Monitoring and Reporting

Pursuant to Sections III (Industry Monitoring and Government Supervision) and IV (Monitoring of Insect Resistance) of DA MC No. 8, series of 2006 "*Strengthening the DA's Science-Based Insect Resistance Management for Bt Corn and Amending Section III.a.(ii) of Memorandum Circular No. 17, Series of 2003*", and following agreements reached between government regulators and industry technology developers through consultations, these procedural guidelines and templates are hereby issued for compliance by technology developers and Regional Crop Protection Center (RCPC) monitors.

All data/information required from the technology developers and RCPC monitors related to IRM monitoring and reporting shall be submitted in a timely manner in both electronic and hard copies at the following addresses of the Bureau of Plant Industry (BPI), respectively:

Email Addresses: *bpi_biotech@yahoo.com*
gmcommercialmonitorcpd@yahoo.com

Mail Address: Office of the Director
Bureau of Plant Industry
San Andres, Malate, Manila City
Attn: Biotech Core Team

I. Compliance Monitoring for Bt Corn Planted in Identified Areas

In general, there are three items which need to be monitored by the technology developers and/or RCPC monitors. These are a) IRM awareness of Bt corn farmers; b) Bt corn adoption or actual planting; and c) profile of pests and beneficial arthropods.

A. For IRM Awareness Briefing

For the awareness briefings conducted on IRM, the technology developer shall fill up **Table 1** and send the template to BPI in both electronic and hard copies at the addresses provided above. Submission of reports shall be done anytime during the cropping season.

B. For Bt Corn Adoption/Planting

To monitor adoption of Bt corn in specific areas, the technology developer shall record and report this by filling up **Table 2a**, which will be consolidated by BPI using **Table 2b**. The technology developer shall send the filled-up template at the same addresses earlier provided. Submission of reports to BPI is scheduled as follows:

<u>Island</u>	<u>Wet Season</u>	<u>Dry Season</u>
Luzon	July 15	January 30
Mindanao	June 30	November 15

C. For profile of pests and beneficial arthropods.

To monitor the Asian Corn Borer (ACB), plant damage, major weed hosts, other corn pests (insects, diseases, vertebrate pest), and beneficial arthropods, both the technology developer and RCPC monitor shall accomplish **Tables 3 and 4**. The filled-up tables should be submitted two (2) weeks after vegetative and post flowering stages of corn for each season and location. Presence of possible ACB damage observed by the monitors shall be reported to the technology developer-in-charge. Gene check should be done within five working days. Confirmed pest outbreak observed must be reported immediately to BPI.

II. Guidelines for Monitoring of Asian Corn Borer (ACB) Resistance

1. The selection of monitoring sites shall be based on the following criteria: (a) high adoption rate or increasing area planted to Bt corn; (b) regularity and severity of ACB infestations; and (c) the site belonging to a corn cluster representing a major corn area in the country.
2. Each identified site shall have at least 50 hectares contiguous area for corn.
3. **Table 5** provides the permanent monitoring areas, the corresponding RCPC monitors, and the technology developers-in-charge of ACB resistance monitoring.
4. In the first season of 2007, ACB resistance monitoring will be done in eighteen (18) barangays adopted as the monitoring sites, of which two barangays belong to one municipality. Monitoring of two (2) sites per municipality is done for the purpose of determining the possibility of obtaining parallel results in terms of ACB resistance. If the results obtained from the two barangays are parallel, then the number of sites per municipality may be reduced to one (1) site upon the review and evaluation of the BPI Insect Resistance Management Advisory Team (IRMAT).

III. Guidelines for Data Gathering and Verification of ACB Resistance

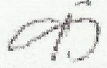
1. ACB resistance monitoring shall be jointly conducted by the technology developers and the RCPC monitors. The technology developer shall coordinate with the designated RCPC monitor to synchronize the schedule of monitoring. However, recording and documentation shall be performed separately by both parties.

2. Regardless of the shape of the field, random sampling of 50 plants will start from the 5th row from the border then will progress crosswise over the field (refer to Figure 1). All sample plants shall be tagged for monitoring purposes to ensure that the corn plants selected during the vegetative stage are the same sample to be monitored during the flowering stage. RCPC monitors and technology developers shall individually have a separate set of 50 tagged sample plants per site/barangay.
3. Occurrence of ACB, plant damage, major weed hosts, other corn pests (insects, diseases, vertebrate pest), and beneficial arthropods shall be monitored at the (a) vegetative stage or 45 days after planting or DAP [plus (+) or minus (-) 2 days] and (b) post-flowering stage or 70 DAP [+ or - 2 days] for each season and location. These data shall be recorded using Tables 3 and 4. All other relevant observations (e.g. drought, flooding, other observations in the untagged plants, etc.) shall not be ignored and should be noted under "Remarks".
4. Farmer-partners or cooperators will also be encouraged to conduct regular monitoring of possible corn borer damage in their Bt corn fields by marking the damaged plants and reporting the damage incidence to the assigned RCPC monitors and/or technology developers.
5. When possible ACB damage is observed or detected by either the farmer-partners or RCPC monitors, it shall be the responsibility of the RCPC monitors to report the incidence to the technology developer. Damaged plants shall be further tagged by different markings for easy reference. The RCPC monitor and the technology developer shall coordinate the schedule of the verification which shall be conducted within five working days after the detection of damage. Whenever feasible, verification should be done in the presence of a concerned LGU official. The test kit for gene check will be provided by the technology developers.
6. Once a damaged corn plant is verified by gene check to be Bt corn, the RCPC monitor will immediately advise the IRM Focal Person, who shall in turn inform the BPI Director and Chair of IRMAT.
7. All ACBs found in damaged corn plants verified as Bt corn shall be collected and forwarded by the technology developers and the RCPC monitors to a third-party scientist for further studies. Results of the studies shall be reported to BPI and IRMAT.
8. **Figure 2** summarizes the flowchart for verification of ACB resistance.

IV. IRMAT Meeting

A meeting of the IRMAT will be called by the BPI as needed.

This Circular shall take effect immediately and shall supersede MC 1 (s2006), "Procedural Guidelines and Formats for Bt Corn Insect Resistance Management (IRM) Monitoring for Industry Technology Developers".


ARTHUR C. YAP

Secretary 