WORKSHOP ON METHYL BROMIDE ALTERNATIVES IN MELON CROP FOR CENTRAL AMERICA AND MEXICO (PART I)

Tegucigalpa, Honduras
31 May – 2 June 2005
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BACKGROUND

The Meeting held in Havana, Cuba, on 24 – 28 May 2004 raised the need to organize a meeting of methyl bromide phase-out Project Managers for the melon sector in Central America.

The Havana Meeting, held back-to-back with the International Conference on Methyl Bromide Alternatives, was organized by ROLAC (Regional Office for Latin America and the Caribbean). The meeting gathered Ozone Delegates of high consumption countries, representatives of the Ministry of Agriculture and Environment of many countries, members of the MBTOC (Nahúm Marban, Mellanie Miller), and the European Community (Tom Bachelor), UNIDO (Guillermo Castellá) and UNDP (Dominique Kayser).

As a result, the requested meeting, “Regional Forum on Methyl Bromide Phase-Out in the Melon Sector and the Search for Alternatives in Central America”, took place in Tegucigalpa, Honduras on 31 May – 2 June 2005. The Vice Ministers of Environment of Honduras and Guatemala attended, as well as representatives of the Ministries of Environment of Costa Rica and Mexico, joined by Coordinators of the phase-out projects approved in these countries, UNEP officers, IICA members, and some farmers from Honduras and Costa Rica.

OPENING

The Forum was officially inaugurated on 30 May. The Vice Minister of Environment of Honduras, Mr. Gerardo Salgado; The Vice Minister of Environment of Guatemala, Mr. Juan de Dios Calle; the Co-President of MBTOC, Mr. Nahúm Marbán and UNEP-ROLAC Regional Methyl Bromide Phase-Out Strategies Officer, Mr. José de Mesa, composed the main table.

Mr. Gerardo Salgado welcomed the participants, especially those coming from abroad, and underlined the importance and perfect timing of this forum, predicting its positive outcome.

José de Mesa remarked that the consumption of the four countries represented in the Forum (Mexico, Honduras, Guatemala and Costa Rica) account for more than 50% of the total consumption of methyl bromide in the region, and therefore this meeting was highly representative. He also thanked UNIDO and UNDP on their role as implementing agencies for contributing to the organization and development of the Forum.
PRESENTATIONS

UNEP

The first presentation was delivered by José De Mesa, Regional Methyl Bromide Strategies Officer (UNEP), who offered a picture of current consumption patterns in the relevant countries, including early phase-out agreements and a general view of the consumption in the region. This presentation served as a basis for further discussions.

José de Mesa also gave a brief description of other cases and countries within the region, and highlighted the strawberry problem in South America. By briefly reviewing some of the other consuming countries he pointed out that the Dominican Republic is in a full phase-out stage, but Chile is a problematic case as its consumption levels have increased in recent years. Argentina’s consumption has also increased, although the country remains in compliance with the Montreal Protocol, but its status before the Multilateral Fund is that of a non-compliant nation.

This presentation raised the following comments:

- It is important to identify the cause of the drop in methyl bromide consumption in the Dominican Republic and whether there is an area reduction.
- It would be very useful to have countries like the Dominican Republic take part in this kind of meetings and invite them to share their experiences.
- Francisco Argeñal, NOO of Honduras, observed that the Dominican Republic used to show a high consumption level of methyl bromide for tobacco; it is rather easy to implement phase-out alternatives in this sector, which would explain the success of the country in the phasing out of methyl bromide.

HONDURAS

Mr. Roldán Echeverría, National Coordinator of the Project to Phase Out Methyl Bromide in Honduras, presented the situation of his country.

As part of the context, Mr. Roldán Echeverría explained the origin, importance and evolution of melon production in Honduras (this crop has substituted the production of cotton). He went on to emphasize its economic relevance for a whole sector of the population, and showed on a map the key locations and climate differences affecting melon production.

Dr. Echeverría mentioned that international supply and demand, and environmental and phytosanitary requirements for potential importers play a key role in the production of melon. His presentation clearly specified the changes that must be implemented at the national level to adapt to the ever-tighter demands of importers. 90% of the production is exported as fresh fruit and some aggregate assets. 94% is exported to the United States. An increase on the interest to export to Europe can be sensed. There are some environmental requirements for exports to the
United States, but they are not as relevant as quality and phytosanitary requirements, leaving aside the ones related to methyl bromide (as there are not any). On the other hand, Europe is stricter on methyl bromide control and, as it is an important market, growers are trying to reach the 0% consumption level.

The above translates as a technological change for producers, technology imports and recruitment of trained labor, as well as changes in processes, use of good environmental and social practices, and the construction of greenhouses.

Currently the United States requires all wooden material to be fumigated with methyl bromide, a measure contradicting the Montreal Protocol.

Mr. Roldán then focused on a UNIDO-approved project for Honduras, and discussed the project’s elements and future development. It covers all sectors. It should be noted that although 95% of methyl bromide consumption is for melon, this substance is also used in tomatoes, bananas and tobacco.

**Open field experiences:**

Telone gives good results, managing to save 80 to 90% of the production. Loses can be found due to natural conditions, not only because of the alternatives. On consecutive applications loses are bigger but can be caused by climatic effects.

Metam sodium allows good sanitary measures throughout the cultivation phase, but loses appear during the harvesting phase.

Regarding biological control, the biological control must be followed by a manual one, thus increasing the costs.

Solarization in addition to biological control has interesting and encouraging results, but this technology needs further investigation.

About grafting, a specific technology is required and should be implemented. When grafting is good quality, a healthy root is the result observed.

Methyl bromide has a protective effect, but the plant looks damaged when extracted and sometimes presents additional problems (methyl bromide is not perfect).

Methyl bromide consumption is minimal in other sectors, such as tobacco and banana.

The melon and watermelon sectors account for 98% of the total consumption of methyl bromide in the country (around 605 tons).
The consumption graphic for the past years shows a uniform reduction; however, it is not approximate to the amounts agreed with the Multilateral Fund: Honduras is in non-compliance since 2004.

Mr. Echeverría also presented a comprehensive photographic report on the different alternatives tested, specially grafts.

Results highlighted:

- There is solid progress on the construction of greenhouses.
- Producers have received technical assistance.
- Graft technique has been implemented.
- A reduction of 115 tons of methyl bromide has been achieved; even if the figure does not correspond to what was originally agreed, it means an important step forward.

Israel and Spain have provided technical assistance; techniques have been applied to about 250 hectares.

The following conclusions were underscored:

The grafting of melon and watermelon plants in pumpkin patterns can substitute methyl bromide.

The adoption of graft technology is a slow process, systematic and limited in many cases when compared to other alternatives (metam sodium, chloropicrin, Telone, biosolarization).

It is necessary to do research and/or transfer an agro-technique to handle grafted plants.

All melon companies need to be aware of all commercial implications of the environmental treaties embraced by SERNA (Ministry of Natural Resources and Environment). Compliance with environmental regulations is a mechanism in itself to establish a more competitive industry.

In this regard, UNEP can help with proposals for regional “non-investment” projects.

The quality standards for melon imports required by the United States and the European Union are mainly related to phytosanitary and food hygienic measures.

Reduction of methyl bromide consumption could be considered as the only environmental measure.

The American market has less environmental requirements than that of the European Union. Nevertheless, compliance with the environmental measures established by the Eurep Gap mean an opportunity to access more demanding markets such as that of the United Kingdom.
Comments:

- Grafting is an actual alternative to methyl bromide, but it entails a very slowly, systematic and limited process.
- Companies need to be aware of the implications derived from treaties in order to enhance their competitiveness.
- Reduction of methyl bromide consumption is the only environmental solution.
- There is only one company in Honduras not using methyl bromide, reason why it was not represented in this meeting. Small companies are virtually non-existent as an impact of globalization.
- Difference in cost between graft plants and regular plants is significant as grafted plants cost approximately 5 to 7 lempiras, and regular plants cost 4 lempiras.
- Alessandro Amadio observed that the figures did not look real. In his opinion, regular plants cost 0.7 lempiras and grafted plants cost 3.3 lempiras, including the seeds.

Data for Guatemala:

<table>
<thead>
<tr>
<th>Treatment first cycle</th>
<th>MB + PE</th>
<th>Graft</th>
<th>MB + PE</th>
<th>Telone 35</th>
<th>MB + PE</th>
<th>MB + VIF</th>
<th>MB + VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Treatment second cycle</td>
<td>Nothing</td>
<td>Graft</td>
<td>Metam</td>
<td>Telone 35</td>
<td>Telone 35</td>
<td>Metam</td>
<td>Telone 35</td>
</tr>
<tr>
<td>Cost First cycle</td>
<td>2,030</td>
<td>1,846</td>
<td>2,030</td>
<td>1,975</td>
<td>2,030</td>
<td>2,385</td>
<td>2,385</td>
</tr>
<tr>
<td>Cost Second cycle</td>
<td>400</td>
<td>1,296</td>
<td>1,200</td>
<td>1,425</td>
<td>1,425</td>
<td>1,200</td>
<td>1,425</td>
</tr>
<tr>
<td>TOTAL COST US$/Ha</td>
<td>2,430</td>
<td>3,142</td>
<td>3,230</td>
<td>3,400</td>
<td>3,455</td>
<td>3,585</td>
<td>3,810</td>
</tr>
</tbody>
</table>

PE = regular polyethylene film.

- Watermelon is known to report a larger production.
- A viable strategy to control methyl bromide can only happen after there is no more secrecy on the results obtained by different companies. Alessandro Amadio doubts this will be possible.
- It is important to point out that Hurricane Mitch has changed conditions for some companies; this implies larger amounts of methyl bromide.
- Another consequence of this natural disaster is that the baseline cannot remain the same as in 1995-1998 due to the difference in conditions. The goal is not real, as other countries experience different conditions.
- Alessandro Amadio observed that some people might say that the soil is experiencing the same usual problems after 7 years, and that soil depletion is the result of bad management and not related to the impact of Mitch. The increase of consumption may be justified on 2 or 3 seasons; from an agricultural point of view it is difficult to try to justify it for a longer period.
- Cooperation is an objective, but the baseline should be modified.

COSTA RICA
Ricardo Garrón, National Coordinator of Methyl Bromide Phase-Out in Costa Rica started his presentation by explaining the background of the project presented by UNDP and the specific circumstances in which it was developed. He also explained that the main objective of this project is to contribute to the protection of the ozone layer and to the achievement of a sustainable substitution of bromide in Costa Rica while strengthening the role of producers. The basic principle is the search for environmentally friendly alternatives.

The project was approved, Mr. Garrón explained, later than in other countries due to a lack of internal agreement that was finally easily reached. It was signed on 2003 and its implementation began in 2004.

Several advantages derived from the signature of this project were described, such as research and signature of agreements with other organizations involved.

Different consumption levels were explained using a graphic with data from 1992 to date, showing a decreasing tendency for imports, and early compliance of agreements signed with the Multilateral Fund. Mr. Ricardo Garrón remarked that Costa Rica is no longer part of the countries that consume more than 500 T, which translates, at least, as a psychological success and advancement towards the total phase-out stage. He also underlined the good will of the producers to decrease the consumption, the level of which was 498 T for 2004. The goal for 2005 is 422 T (80/20).

94% of the total consumption is found in the melon sector and 4% in the flowers sector.

**Description of the project:**

100% of the consumers were identified in Costa Rica, and cooperation agreements were signed with all of them. Honduras reports the same positive status.

There are 48 protocols for research and 8 workshops have taken place with farm technicians. This led to an agreement on the percentage of reduction and distribution of shares.

A Seminar on biological alternatives to methyl bromide was held. The Association of Researcher and developers of alternatives to methyl bromide was created.

Regarding the legal arena, agreements have been signed, an only one window and unique system was adopted. Rules are clear and so there is legal certainty.

National and international recognition to producers that achieve reductions is granted.

As per communications, a new Internet webpage was launched www.nobromuro.org.

For 2005, the country wants to perfect alternatives and include bio-fumigation on the field of solarization, use of plastics and substrates, and wider application of biological alternatives.

Mr. Ricardo Garrón underscored the following conclusions:
No alternative is identical to methyl bromide.
There are ways to quickly reduce consumption, allowing the country to comply with its international commitments while it develops sustainable alternatives: VIF and formulas with less bromide.
In many cases it is possible to produce melon, in competitive bases, without methyl bromide. The main issue is to keep a positive attitude in the face of changes.
Proper management of the soil can bring a biological equilibrium that allows production with less sanitary problems, with lower costs and less pollution.

At the end of the presentation a promotional video was projected, with interviews to farmers that participated in the project. The objective was to underline the collaboration and good will of the melon sector in relation to this project.

Comments:

- Biological alternatives are not registered. The process of developing a registry will entail an increase of costs.
- A risk scale and regulations must be devised.
- It is mandatory to have a registry in order to export to Europe.

GUATEMALA

The second day began with a presentation delivered by Mr. Mauricio Vázquez, Field Technician working on the Phase-Out Project in Guatemala. Mr. Vázquez presented the background of the phase-out strategy with a particular emphasis on the phytosanitary aspects of this problem.

Initially, a study of field diseases was performed by international experts. This study brought to light a series of stumps of the virus from the sifting of cucurbitaceous, MNSV and presence of the vector, *Olpidium bornovanus*. Mr. Vázquez explained that the lack of Monosporascus evidence could be nothing but a consequence of the time when the soil was tested by the experts. It would have been more interesting if the samples were taken through different months to study the evolution of soil pathogens.

Many alternatives have been used, including grafting: Telone, Metam sodium and VIF plastic with different concentrations. As result, it was explained that there are no important differences among these theses and in different places. Existing differences among places are caused because of different handling, not because of the efficiency of the treatments.

Results observed with the use of Telone are: 70 to 80% reduction of illnesses of soil. Metam sodium achieves 60 to 65% effectiveness. Analyzing grafting for the first 20 days is very important, especially temperature control. Data methodology is also quite relevant at the time of reporting, and some farms do not have any.
Nevertheless, we can conclude from this study that water stress is bigger in joint grafting practices than in tiered grafting processes.

**Observed problems:**

- Temperature was not maintained at an adequate level.
- Seeds were contaminated.
- When a high dose of nitrogen was applied a gap was caused to the stem; together with water stress resulted in a total breaking of the stem.
- Lack of calibration of the temperature measuring equipment.
- Strangled plants.
- Plant material is susceptible to plagues, diseases and water stress.
- Flies appeared.
- The weather changes in the second season (January to May); it is around 35º C.
- Many plastics are thermopiles to increase temperature up to 10º C. This is a serious issue since grafting is susceptible to high temperatures. Joint grafting causes growth problems.
- Honey variety seems to be not compatible with grafts.

Mr. Vázquez pointed out these two main factors of collapse analyzed: inadequate irrigation and soil diseases. A preliminary conclusion would be the need to study fertilization, different grafts and patterns for more resistance.

**Conclusions:**

- The primary agent observed was *olpidium bornovanus*, with 100% incidence on all the treatments.
- MNSV presence was established (melon necrotic spot virus) on melon but it is not present in the creole variety evaluated (*cucurbita ficifolia bouche*).
- The following were detected: *Rhizoctonia, Cladosporium, Alternaria, Fusarium, Helminthosporium and Curvularia*.
- There is no presence of *Monosporascus cannoballus*.
- *Olpidium Bornovanus, Monosporascus cannoballus* were isolated. Both for melon and pumpkin appeared on the fourth sampling or during the third week after the transplant.
- *Fusarium spp., Rhizoctonia spp, Curvularia spp.* were isolated, both for melon and pumpkin appeared on the fourth sampling or during the third week after the transplant. Its behavior on the crops does not lead to considering it a pathogen.
- During the 10 weeks of sampling the presence of MNSV was not detected, despite the presence of *Olpidium bornovanus*. 

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• It was not possible to establish which of the organisms is the primary collapse agent in melon crops under the conditions of research.

Comments:

- Water stress causes collapse of plants (and not monosporascus).
- The companies said that there are fields so vulnerable that they die regardless of the action taken; this seems to be a common situation in many fields in Honduras, that is why only methyl bromide can help.
- The companies stated that grafting is an alternative, but the costs are higher for melon. Mr. Amadio referred to the Honduras table showing data proving the contrary.
- Grafts are an alternative in the middle and long run, but not in the short run.

MEXICO

Danae Díaz, representative of the Ozone Office of the Ministry of Environment and Natural Resources, explained the context of the Phase-Out Project to be developed in Mexico. She also presented a very detailed document regarding the areas where methyl bromide is used, including amounts, sectors and crops. By sector, methyl bromide consumption in Mexico is registered as follows: 43% in tomato; 35% in chili; 7% in melon, and 9% in other vegetables.

Danae Díaz explained that the Project is a **Technical Assistance and Training to Phase-Out 20% of Methyl Bromide Consumption in Mexico.**

   The objective of this project is **to provide technical assistance and training to achieve the compliance of the commitments contracted by Mexico on methyl bromide consumption,** and it is an **18-month project.**

This project will be implemented in coordination with the Ministry of Agriculture, Livestock, Rural Development, Fishery and Food (SAGARPA), UNIDO and UNDP as implementing agencies.

The main activities of this project are:

1) Workshops and refresher courses to spread information and existing technologies for the optimal use of methyl bromide and alternatives.
2) Support entrepreneurs and warehouses users on initiatives for training and technical assistance.
3) Monitoring results.
4) Evaluation and dissemination of results.
5) Development of data bases and systems to control methyl bromide consumption: **SISSAO (SYSTEM FOR THE FOLLOW UP OF OZONE DEPLETING SUSTANCES).**
It should be noted that SISSAO is an IT program that will allow the users know the exact location of every ODS container, including methyl bromide. In other words, it will analyze the traceability of the product.

Lines that the project will follow:

1) **Create a consumption quotes system for ODS.**
2) **Authorize ODS imports and production.**
3) **Tracing of exports.**
4) **Data base for ODS movement in the country up to the last distribution chain.**
5) **Coordination between the National Customs System, the Ministry of Health (agreements in process), Ministry of Finance, ODS consumers, producers and importers.**
6) **Provide the general public with information in order to follow up on consumption.**
7) **Implementation scheduled for November 2005.**

Their imports control system is also interesting, as it has allowed the establishment of an ODS follow up system including three main components: imposition of consumption quotas, authorization for ODS production and imports, and follow up on the movement of ODS.

**MBTOC**

Dr. Nahúm Marban came to this Meeting both, as National Coordinator of the Phase-Out Project in Mexico and Co-President of the MBTOC (Methyl Bromide Technical Options Committee). His speech was centered on the questions that may arise on the role of MBTOC and the declaration of critical usages.

He began by discussing the world consumption tendencies and the current MBTOC structure. When explaining critical uses, he based his argument in different decisions adopted by the Executive Committee and the Meeting of the Parties of the Montreal Protocol that is the only decision-making authority. In conclusion, critical uses, according to the Protocol, are applied for Article 2 countries only (developed countries), but the resolutions taken under the Protocol are the ones agreed by the Parties themselves; therefore, these decisions could change in the future, and the current search for alternatives by Article 5 countries (developing countries) could become highly important.

Finally, Dr. Marban explained the following steps to be taken by MBTOC and encouraged the participants to visit the webpage [www.teap.org](http://www.teap.org)

**Comments:**

- Most of the participants (business men) are not familiar with the administrative issues of the Montreal Protocol.
- Information must be made available to producers.
- Honduras mentioned that several European Union countries requested critical uses for melon crops and they supported Guatemala’s question on how developed countries are still requesting CUNS for melon harvesting. However, the argument was dropped when these requests were withdrawn.
- Is there information about independent consultants? Mr. Amadio replied that there is much information available around the world.
- If consensus is not reached among the countries (problem explanation), conventions are not reached.
- Stakeholders should express their needs.
- Funds are required for demonstration projects. Mr. Amadio expressed doubts about the approval of new demonstration projects.
- Demonstration projects must include technical arguments.
- Guatemala stated that structural adjustment programmes eliminated research programmes.

**IACI**

Mr. Byron Miranda, representative of IACI (Inter American Institute for Agricultural Cooperation), presented a very interesting external point of view on methyl bromide phase-out in the region. All participants benefited from this presentation and valued IACI’s integrative approach to the environment.

Mr. Miranda began by addressing the Agenda of Regional Technical Cooperation where most of ICCA actions take place. He also remarked that the advocacy for and promotion of agriculture and their link to sustainable development, especially in terms of biodiversity, are key to IACI.

He went on to provide several examples, like the one where a Central American community used to harvest their crops in inadequate soil, but very rich in minerals. Thus the community changed their activities to mineral extraction and had access to faster growth and wealth. This demonstrates that a different and open vision could offer good solutions to problems.

Eco-agriculture is the term that ICCA chose to describe the agriculture of Central America, where they aim at reaching the synergy between biodiversity and agriculture. The challenge would be to achieve attractive and profitable agricultural practices while protecting biodiversity.

**Strategies to promote eco-agriculture:**

- Increase productivity and sustainability on lands available to farming.
- Improve wildlife habitats in the farms.
- Have protected areas near to harvesting zones and fields.
- Imitate natural habitats, including everlasting plants.
- Encourage production methods that help decrease pollution.
- Good handling practices.
- Make projects more accessible by raising them from the national to the regional level (effective implementation versus lip service).
It is important to bring into awareness that protected areas are not enough; it is necessary to open new doors and increase interaction among them.

What is the role of IACI? How to access its resources?

IACI provides environmental services through the empowerment of rural communities. Every territory offers different opportunities; therefore, we have to develop means and mechanisms at particular levels.

Communities must be assessed, institutional mechanisms must be created, and resources must be managed and distributed. IACI negotiates the technical cooperation agenda of each country on a yearly basis and prepares a public audit report.

**UNEP: Consequences and Procedures of Non Compliance and Final Comments.**

The group asked José de Mesa to explain issues related to countries in non-compliance and the consequences of this status before the Montreal Protocol.

In general, non-compliance processes are analyzed by the Implementation Committee (on the core of the Montreal Protocol) on a case-by-case basis. The first step would be the negotiation of changes in the general conditions of the Protocol. In the case of Guatemala and Honduras, the Meeting of the Parties has consulted the Implementation Committee on modifications to the original commitments of these countries with the Multilateral Fund.

Mr. de Mesa also explained that there are other actions (not yet applied to any country), like the consideration of Non Party State to the Montreal Protocol on countries in non-compliance with the agreements contracted. The first consequence of this declaration would be that Parties would not be allowed to sell ODS (including methyl bromide) to such Non Party Country.

José de Mesa explained the particular situation that Guatemala is experiencing on this subject. It seems that the Ministry of Environment has allowed a much higher increase in methyl bromide imports for 2005 than what is stated in the previous agreements with the Multilateral Fund. This compromises the position of Guatemala. All the participants offered to let their Ministries know about this situation and help Guatemala return to compliance, for the problem affects all adjacent countries.

This explanation raised the following comments and conclusions:

**Comments:**

- Honduras has looked for consensus and support through negotiations with the companies. Everybody should contribute.
- Alternatives represent a new world for companies; this is the reason why it is necessary to speed the education and research processes to bring the results to private companies.
Guatemala asked about the possibilities to negotiate with the Executive Committee at the beginning of 2006. The group agreed that negotiation is always possible, as long as your position is well-grounded.

There is a latent concern about Guatemala’s case, as it also affects other countries, especially the ones that grow melons.

The Project’s orientation should be changed: the choice of strategies should depend on the farmers, it should not be imposed.

Instead of changing or rephrasing the strategies, they should be complemented.

A political mission could be requested for Guatemala.

It is important to highlight, that there are options to reduce consumption on the short run, among them plastics VIF; this can help gain some time to find alternatives.

Stakeholders require training and funding. Alessandro Amadio mentioned the availability of $1,000.00 for Guatemala, an amount that was offered to the stakeholders in order to develop an investment plan.

Another option is chloropicrin, but it is under the chemical weapons convention. Alessandro Amadio observed that pure and mixed with Telone is already registered in many countries.

Guatemala stated that the methyl bromide promoter must be included in this negotiation process.

Regarding chloropicrin, it must only be used temporarily, as it is a very aggressive pollutant. Alessandro Amadio stated that Telone is much more dangerous as it reaches the ground water layer. Chloropicrin, basically gets evaporated into the atmosphere (it is a gas, just like bromide).

FIELD TRIP

The Government of Honduras organized a field trip for the participants. This trip proved key to fully understand the presentations and comments of the previous days.

On Thursday morning the group visited some greenhouses in Ojo de Agua, where they were able to see different experiments underway, especially for grafted watermelon. They were also able to appreciate the different harvesting procedures used on the experiments. Humidity and temperature control, as well as bee pollen are essential.

In the afternoon, the group enjoyed lunch at the Universidad El Zamorano, one of the most important agricultural institutes in the region and the entire continent. El Zamorano students come from all over the world, but mainly from Latin America. The participants visited the facilities and were given a presentation on the practices system for agriculture and livestock sectors that the students are skilled to apply depending on their specific field of research.

Later on, two students of Professor Alfredo Rueda delivered an interesting speech on biocides produced and currently sold by the University, based on a presentation of the Trichoderma. The group found the presentation most fascinating and posed a good number of questions.

Another student explained the current Project led by Prof. Alfredo Rueda and funded by the Swiss Cooperation for Agricultural Training in Local Communities. This project is being
implemented in Nicaragua, El Salvador and Honduras, and has being operating for 10 years now with the support of local NGOs and other institutions to reach all farmers.

There is no doubt about the success of this project. The group wished Prof. Rueda the best in his endeavors.
CONCLUSIONS AND RECOMMENDATIONS

1. The group acknowledged the importance and timeliness of the Meeting, where Honduras, Guatemala, Costa Rica and Mexico were able to share their experiences. This type of meeting also represents a valuable tool for the implementation process of the Montreal Protocol. The group also acknowledged that melon producers in these countries are making a great effort to search and implement methyl bromide alternatives.

2. The high consumption countries participating in the meeting expressed their concern about the potential increase on methyl bromide imports for 2005 in Guatemala. They requested that the institutional representatives present in the meeting share this concern with their own Ministries in order to help Guatemala reconsider its position.

3. Honduras requested UNIDO to make every possible effort before the authorities of the Multilateral Fund to reorient and implement the second stage of the project according to the results of its first phase.

4. Guatemala and Honduras explained that they need more time to comply with the obligations contracted with the Montreal Protocol Secretariat and the Multilateral Fund, and requested that UNEP/CAP submit a non-investment project to the consideration of Multilateral Fund Secretariat that would allow them to return to compliance.

5. The group agreed on stating that Law ISPM 15 (FAO) represents a shock on the imports market for methyl bromide in high-volume consuming countries.
Agenda

Tuesday, 31 May

8:30 — 9:00  Registration
9:00 — 9:30  Opening Ceremony, Ms. Patricia Panting, State Minister
9:30 — 10:00  Introduction and Objectives of the Meeting, Mr. Roldan Echeverría
10:00— 10:30 Coffee Break
10:30-11:30 Methyl Bromide Phase-Out Project in Honduras, Mr. Roldan Echeverría
11:30-12:30 Methyl Bromide Phase-Out Project in Guatemala, Mr. Mauricio Vásquez
12:30-13:30 Lunch

13:30— 14:30 Methyl Bromide Phase-Out Project in Costa Rica, Mr. Ricardo Garrón
14:30-15:30 Methyl Bromide Phase-Out Project in Mexico, Dr. Nahúm Marban
15:30-16:00 Coffee Break
16:00-17:00 Questions and Conclusions – Phase-Out Projects
19:00 — 21:00 Welcome Cocktail

Wednesday, 1 June

9:00 - 10:00  Presentation on IICA, Dr. Byron Miranda
10:00 - 10:30 Coffee Break
10:30 — 11:30 Critical Uses, Dr. Nahúm Marban
11:30 – 12:00 Procedures and Consequences of Non-Compliance, José de Mesa
Questions and Comments

12:00 – 14:00 Lunch
14:00 – 17:00 "Regional Strategies for Compliance", exchange of ideas for the development of strategies for methyl bromide and its alternatives, Mr. José de Mesa

Thursday, 2 June

8:00 — 15:00 Field Trip (Green houses in Ojo de Agua, El Paraíso, visit to Universidad El Zamorano)
## List of participants to the Regional Forum on Methyl Bromide Phase-Out in the Melon Sector and the Search for Alternatives in Central America

<table>
<thead>
<tr>
<th>Country</th>
<th>Organization</th>
<th>Name</th>
<th>E-mail</th>
</tr>
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<tbody>
<tr>
<td><strong>Honduras</strong></td>
<td>Ministerio de Medio Ambiente</td>
<td>Mirza Osiris Castro</td>
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