

**Options to enhance national
coordination and development of
the Canadian biopesticides
industry**

Study report

by

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For the

Risk Reduction Program

Pest Management Centre

Agriculture and Agri-Food Canada

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Objective: In support of the objectives of the joint AAFC-PMRA Pesticide Risk Reduction Program, to investigate opportunities to enhance national coordination and development of the Canadian biopesticides sector.

Time Frame: This study was carried out in February and March 2007

Confidentiality: the parts of this report that should be kept confidential for privacy reasons are highlighted in gray (as is this note) except for the appendices section where the confidentiality of an entire appendix is simply stated under its title.

Note: *In this document, the term “Canadian biopesticide industry association” is used for the sake of consistency to designate generically any organization representing the industry without presuming of the structure, name or legal status the industry might choose to give it.*

Executive Summary

The Canadian biopesticide industry is a small but growing industrial sector, made up of small companies operating under heavy technological and market constraints, as well as strict regulatory oversight from the Pest Management Regulatory Agency (PMRA). This study was commissioned to evaluate the possibilities and opportunities for enhancing the coordination of this sector, for the benefit of its participants.

Two main industry associations exist in this area: the BioPesticide Industry Alliance (BPIA, in the U.S.) and the International Biocontrol Manufacturers Association (IBMA, mainly in Europe). This study evaluated both, as well as other models in closely related areas. These organizations typically i) disseminate information of interest to their members; ii) provide opportunities for networking among them and with users of their products; iii) promote the industry and its products to various stakeholders and the public; and iv) interact with the regulatory authorities to try and ease the registration process while continuing to ensure the safety of the products. All these organizations have a membership fee structure designed to reflect the types of businesses of the member companies and their size. Key people were contacted to obtain more specific information on the challenges and achievements of these organizations.

The BPIA started in 2000 as a group of key representatives of U.S. biopesticide companies (including the larger ones worldwide) and a few independent regulatory consultants. It rapidly established excellent relations with the U.S. Environmental Protection Agency (EPA). EPA directors and staff regularly participate in the member meetings and in those of the regulatory committee. BPIA members are proud of their contributions to the ongoing improvement of biopesticide registration and to the broader U.S. regulatory framework. The BPIA also established strong links with the biopesticide program of IR-4, the public research organization on minor use pest management in the U.S. The BPIA started collecting membership dues in 2004. These support a part-time Executive Director helping to coordinate and facilitate the work of the board of directors and the committees. They also underpin the BPIA's new promotion and education effort. The BPIA wishes to reach the majority of small U.S. biopesticide companies that are not members but a few of these also consulted in this study considered the minimum \$1000 annual dues too steep for their limited financial means.

The IBMA started collecting dues right from its inception in 1997. Despite determined efforts aimed at improving the biopesticide registration guidelines in the E.U., the IBMA feels that it has had scant success and that much remains to be done. The IBMA has also established links with major European grocery chains in a sustainable food production and integrated pest management certification program.

Other organizations evaluated in this study included the Association of Natural Biocontrol Producers (beneficial biocontrol invertebrates), the Spray Efficacy Research Group International (forestry pest management, mainly through biopesticides) and Plant Inoculants Canada (representing the biofertilizers industry).

The second phase of this study examined various opportunities for representation of the Canadian biopesticides industry. One important group where such representation would be both welcome and beneficial to the industry is the Pest Management Advisory Council. This council regularly gathers representatives of key associations, umbrella organizations and other stakeholders representing all areas of pest management and public and environmental safety in Canada to advise the Minister of Health (and the PMRA) on regulatory issues. The PMRA would also welcome concerted industry input on its upcoming regulatory proposal for low risk products as well as on updates to relevant guidelines to be issued in the future, such as those on pheromones and microbial products.

Selected representatives of horticultural organizations confirmed their strong and growing interest in biopesticide products and the advantages they would see in being able to interact with the industry

through an association. In addition, several representatives of the organic agriculture sector indicated that efforts are underway to establish a permitted substance list following the implementation of the new Canadian organic agriculture standards and that biopesticide industry representation would be useful in this context.

In the next phase of this study a selection of the main interested parties were consulted. A wide cross-section of representatives of the different kinds of Canadian biopesticide companies was contacted (27 people). A summary of the findings discussed above was presented to them. Individual discussions followed to evaluate the respondents' interest in some form of industry representation and their willingness and ability to get involved in establishing, managing and supporting a representative organization. A majority of the respondents (24) expressed interest in joining an industry association with over half indicating a strong interest and willingness to get actively involved in establishing it (13 respondents). Opinions on the specific structure of this industry association and its priorities differed somewhat. Several focussed predominantly on regulatory issues while others expressed an interest in other activities as well.

The two independent regulatory consultants with expertise in biopesticides consulted expressed a relatively low interest in a biopesticide industry association. However, the three independent pest management and biocontrol consultants approached were very interested in joining.

The possibility of the Canadian sector being represented by the IBMA or by CropLife Canada (association of the chemical pesticide and crop biotechnology industry) was deemed unrealistic. The interest expressed by the BPIA in representing the Canadian as well as the U.S. industry was examined in more detail. In favour of this option is the interest of both industries in registering and marketing their products in both countries. However, most of the Canadian respondents queried on this point preferred a separate Canadian association.

While this study can be seen as a first step towards establishing a Canadian biopesticide industry association, the Pest Management Centre has no specific plans at this point to continue moving the process forward. Indeed it is essential that the industry take ownership of its own organization for it to succeed. Therefore, the main recommendation of the report (addressed more to the industry than to the study sponsor) is that a general meeting of the Canadian industry be organized, gathering all existing and potential biopesticide companies. The goal of this meeting would be to develop a broader agreement on establishing an industry association and a consensus on its structure (membership criteria, committees, finances, office); its activities and priorities; etc., as well as to produce a clear action plan for those involved in establishing the association.

What are biopesticides?

The term is very broad and not all those who use it agree on the definition. The name is sometimes frowned upon as sounding too similar to chemical pesticides and many companies, particularly in Europe, that manufacture the kinds of products described below prefer to use other names. Also, while the name suggests that they are biological products that kill pests, much like synthetic pesticides, many do not. Semiochemicals such as insect pheromones may lure insect pests into traps or disrupt their mating habits enough to suppress their population but they are naturally produced by the insects themselves and are not toxic to them in the concentrations used. Similarly, some biochemical products like the harpin family of proteins stimulate the plants' natural ability to defend itself against disease or insect herbivory. Products of varied origins and modes of action are also often included, such as kaolin clay, diatomaceous earth and various soaps (against insects), acetic acid and corn gluten (against weeds), hydrogen peroxide and potassium bicarbonate (against diseases), among many others. Certain natural extracts have toxic modes of action against insects (pyrethrins from chrysanthemums or azadirachtin from the neem tree) or plants

(such as the well-known broad spectrum herbicide glufosinate, of microbial origin but now synthetically produced).

Microbial biopesticides may be fatal diseases of insects (e.g.: *Bacillus thuringiensis*, or Bt - the most widely used bacterial bioinsecticide; common entomopathogenic fungi such as *Beauveria bassiana*; various insect species-specific baculoviruses, etc.) or plants (*Chondrostereum purpureum*, *Sclerotinia minor*). They may also be antagonists of plant pathogenic microbes (*Trichoderma harzianum*, *Bacillus subtilis*, etc.).

In the U.S. some synthetic compounds such as insect growth hormone analogs are also considered as biopesticides by virtue of having a non-toxic mode of action on the target pests as well as having a very low risk profile for non-target organisms.

In Canada, all biopesticides mentioned above are regulated by the Pest Management Regulatory Agency (PMRA) and in the U.S. they fall under the purview of the U.S. Environmental Protection Agency (EPA). Within the broader designation of biopesticides, the EPA also considers what it calls Plant Incorporated Protectants: crop plants genetically modified to produce their own biopesticidal proteins (for example, Bt toxins). In Canada, all new crop varieties are regulated by the Canadian Food Inspection Agency (CFIA) regardless of the method used to develop them (classical breeding, mutagenesis or targeted genetic modification) or the traits imparted (agronomic improvement, pest management or molecular farming traits).

The term biopesticide does not apply to beneficial invertebrates such as parasitoids and predators of insect pests or herbivorous insects used for weed management. However, one category of beneficial invertebrates is sometimes included in the term biopesticide. Entomopathogenic nematodes are regulated in Canada (CFIA), the U.S and the E.U. in a manner similar to other “reared” beneficials. However, they are produced in fermentation tanks and formulated and sprayed much like microbial biopesticides.

For the purpose of this study, the term biopesticide is used in a wide sense similar to the EPA designation and includes essentially all products of natural origin, as well as analogs thereof with non-toxic profiles, that are used to manage pests, except for macro-invertebrates, new crop varieties and other higher organisms.

Why does the Canadian biopesticide industry need greater coordination?

The Canadian biopesticide industry is a small but growing industrial sector, made up mostly of very small companies, often struggling to stay afloat, with a few slightly larger ones, operating in a highly technical and regulated environment. These companies face challenging issues in all areas of activity. These include the discovery and characterization of new product leads, the sourcing of funds to invest in lengthy and costly development, registration and production scale-up efforts, the relatively low profit margins for pest management products and the reluctance of many potential users to apply biological products when cheaper conventional chemical pesticides often produce more dramatic effects in the short term.

While companies compete with each other in areas such as product discovery, private financing, proprietary technical innovations and of course, marketing and sales, in other areas, such as education of the potential users and the public, interactions with the regulatory authorities, etc. they could greatly benefit from the kind of coordinated, collaborative approach that an industry association could provide. However, their ability to establish and participate in an association is by no means certain at first glance.

While biopesticide industry associations have been established in other jurisdictions, most notably in the U.S. (BioPesticide Industry Alliance, BPIA) and in the E.U. (International Biocontrol Manufacturers

Association), a cursory analysis of the biopesticide industry in these markets indicates that the conditions they operate in are different from those of the Canadian sector.

All three areas (U.S., Europe and Canada) sustain numerous successful government and academic research programs that have traditionally been the main source of newly discovered biopesticide leads. However, the agricultural sectors and consumer markets are quite different in the three areas. The U.S. has a large agricultural sector compared to its surface area, which also enjoys a large domestic market. The U.S. regulatory system for biopesticides is recognized as both expeditious and safe, which is conducive to a large number of registered products. Accordingly, the U.S. enjoys by far the largest biopesticide sector, comprising many small companies as well as all of the larger ones worldwide. In Europe, registration of biopesticides is a complicated, bureaucratic affair but the agricultural sector is heavily subsidized. The dense population is also sensitive to environmental and food safety issues and receptive to the “green” image of biopesticides, not only through the organic product market but also through well-established and growing sustainable production and integrated pest management certification schemes.

Canada has a largely unsubsidized agricultural sector that is small by comparison to the size of the country but large by comparison to its population, with low profit margins and a strong focus on international export markets. The Canadian population also has a relatively low level of concern for food safety issues although the organic market is growing in Canada as well (with annual sales increases of about 20%). The Canadian biopesticide regulatory system, while largely inspired by the U.S. and striving for greater efficiency, was long seen as more cumbersome and restrictive.

This study was commissioned to evaluate the possibilities and opportunities for enhancing the coordination of the Canadian biopesticide sector.

A. Evaluation of organizational models for the biopesticide sector

A.1. Overview of existing organizational models

This evaluation studied various associations representing the biopesticides or other similar industrial sectors in Canada and elsewhere to better understand what these organizations do, what benefits they offer to their members and what are their challenges and successes.

The closest model to what a Canadian biopesticide industry association might be is probably the BioPesticide Industry Alliance (BPIA) in the U.S. The International Biocontrol Manufacturers Association (IBMA), based in Europe, covers beneficial invertebrates in addition to biopesticides. However, in North America, the beneficial invertebrates industry is represented by the Association of Natural Biocontrol Producers (ANBP), leaving the biopesticide companies to gather separately.

Two other fairly closely related organizations are the Spray Efficacy Research Group International (SERG-I) and Plant Inoculants Canada Inc. (PIC). SERG-I regroups the forest pest management organizations in Canada and in the US (Federal and Provincial ministries of natural resources, provincially sponsored companies, etc.). Much of their work and research are done using biopesticides due to restrictions on the use of chemical pesticides in forest environments. Plant Inoculants Canada represents the inoculant industry, which is of interest because of the similarities with the biopesticide industry. While most of the products clearly fall either in the microbial biopesticide (see examples above) or the microbial biofertilizer category (e.g. *Rhizobium* legume inoculants, arbuscular mycorrhizal fungi, etc.), others are not so easily classified for various reasons. Their mode of action may be unclear or they may have a dual mode of action pertaining to both categories. In some cases, the distinction is made solely on the basis of what claim the manufacturer wishes to make on the product’s label and,

consequently, which agency will register the product (in Canada: Pest Management Regulatory Agency for biopesticides or Canadian Food Inspection Agency for biofertilizers).

Other related organizations include the chemical pesticide and transgenic crop industry association CropLife Canada, and the various organizations representing the biotechnology sector (BIOTECanada at the national level and various provincial organizations such as Ag-West Bio, Ontario Agri-Food Technologies, Centre québécois de valorisation des biotechnologies, Bio-Atlantech, etc.).

Various mechanisms may be possible for financing an organisation representing the biopesticide industry. However, all the organizations described above are mainly financed through annual membership fees. In the case of the BPIA, the IBMA and PIC, a differential fee structure is established to reflect both the type of business of the member company and its sales volume (see details below). The rationale is that the benefits provided by the association will profit each member company somewhat differently depending on their type of business but generally more or less in proportion to their size. A membership fee structure based on sales volume is also used by CropLife Canada. The ANBP uses a flatter fee structure based only on the type of company (consultant, distributor, producer). Finally, SERG-I simply states that the executive members share equally among them the expenses and part-time salary of the Executive Director. This is consistent with the prevalence of government involvement and the relatively reduced importance of commercial competitiveness in the activities of the SERG-I. Levies on sales, which are commonly applied on agricultural commodities to finance associations and sector activities such as research and lobbying are not used in the pest management sector.

Various publicly supported organizations have been established with mandates that include, among other things, the development of the Canadian biopesticide sector. The Pest Management Centre of Agriculture and Agri-Food Canada and the Biocontrol Network, initially funded by a research networks grant from the Natural Sciences and Engineering Research Council of Canada are the main examples. These organizations try to help the sector in different ways, to represent it in consultations when needed, to promote it among users and the public, etc. However, their mandates are much broader and their representation activities are often in competition with many other priorities. These organizations cannot be expected to provide the kind of focussed, adapted support and representation that an organization dedicated solely to the sector could.

The kinds of activities that a biopesticide industry association might carry out are listed as follows:

1. dissemination of information among the membership or the sector (scientific and technical advances, emergent pest issues, market trends, news, etc.);
2. sharing among members of experiences with regulatory and other issues;
3. facilitation of other networking activities among members and with other stakeholders and service providers;
4. dissemination of information on the sector and on the advantages of its products to clients, governments, other stakeholders and the public;
5. coordinated representation of the members or sector to provide input to and participate in consultations with other stakeholders, particularly national regulators and international regulatory harmonization structures;
6. cooperation with other associations and similar organizations internationally;
7. liaison with research organization and government programs (universities, funding programs, etc.);
8. development of industry standards (e.g. product quality and stewardship);
9. training, consultation and/or marketing services;

Lobbying activities are not mentioned. They are typical of associations of large companies such as CropLife Canada, BIOTEC Canada, the pharmaceutical sector, etc. but it would be unrealistic (at this time) to include them in the list of potential activities of a biopesticide industry association.

A.2. BioPesticide Industry Alliance

The BPIA regroups biopesticide producers, consultants and service providers active in the U.S. The BPIA website describes activities and priorities covering all the points above except No. 9. These are mentioned either as objectives, principles or benefits of membership or illustrated in the 'Meeting Reports' section of the website.

Discussions with the Executive Directors (outgoing and incoming), members of the Board and of the PR and regulatory committees and other BPIA members were used to determine which of the activities under the points listed above have been, are or will be carried out, and how, what challenges may have been encountered and what successes were achieved.

A.2.a. List of people contacted

The list of people to contact was discussed and finalized with the Pest Management Centre. The people listed below were successfully contacted.

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Essentially all the people contacted were very positive about their companies' membership in the BPIA and the benefits derived from it. The confidential raw discussion notes on the conversations with these people are provided in Appendix 2.

A.2.b. History and administrative structure

The BPIA was founded in 2000 thanks to the efforts of Pam Marrone, founder of AgraQuest, and a few other individuals who still make up the BPIA Board today. Initially, the only commitment expected of the members was the adherence to a common statement of product quality and the willingness to work together on the main goals of the organization and to get together periodically. This resulted in a Board that is very actively involved in the operations of the association. The BPIA started collecting membership dues in 2004, which allowed it to hire an Executive Director part-time but the Board remains very active to this day. There are typically two general meetings per year, usually one in Sacramento, CA, in the spring and one in Washington DC in the fall. The Board meets at each general meeting and twice more each year.

The BPIA is financed through membership fees to cover the part-time salary and travel costs of the Executive Director as well as meeting costs. Membership is organized as follows:

- Voting members (manufacturers with at least one registered biopesticide and whose business is at least 50% biopesticides): annual fees ranging from US \$1,000 to 5,000, depending on sales volume.
- Associate members (manufacturers with a lower proportion of biopesticide activity but with at least 1 biopesticide registered): flat fee of \$1,500.
- Ad Hoc members: other companies (particularly service providers) with significant biopesticide activities: flat fee of \$1,500.

This membership structure was intentionally designed to allow participation of all companies genuinely committed to biopesticides while ensuring that the control of the organization remains with companies large or small whose business is primarily with biopesticides.

A.2.c. Members

The BPIA membership includes all the major biopesticide companies as well as several small U.S. companies. Unlike the IBMA, none of the current members are predominantly chemical pesticide companies with a minor interest in biopesticides.

In the past, no formal campaigning for new members took place although informal contacts were certainly established when the occasion presented itself. However, the issue of the large number of biopesticide companies that are not BPIA members has been a source of concern for some on the Board and has been discussed within the organization. The group may become more active in advertising to potential members and seeking new members in the future.

A.2.d. Regulatory activities

Biopesticide regulatory issues and establishing good relations with the regulatory authorities were key reasons for the founding of the BPIA. The regulatory consultants on the Board, Amy Roberts and Gary Libman were very active from the beginning.

Several regulatory consultancy firms are members (ACTA, Exponent, Keller & Heckman, SciReg Inc. and TSG). As for the biopesticide manufacturers, the registration consultancy firms on the BPIA member list represent only a small fraction of the professionals operating in the field but a majority of the larger companies (at least in part as a result of the \$1,500 annual membership fee). The participation of regulatory consultants in the BPIA is mutually beneficial in that the consultants provide technical expertise in the regulatory system and benefit from increased exposure to potential clients.

The regulatory committee was the first committee formed by the BPIA. The BPIA representatives contacted were unanimous in affirming that the development of a good working relationship with the EPA and the establishment of the BPIA as an indispensable negotiating partner for all biopesticide regulatory matters are the major successes of the BPIA to date. These successes were achieved thanks to the active involvement of the independent regulatory consultants as well as the member companies' regulatory staff. The regulatory committee meets 4 times per year, usually with staff from the EPA's Biopesticides and Pollution Prevention Division, including its Director, Dr. Janet Anderson. The BPIA is systematically consulted in advance of any changes to the regulations and discussions and clarifications on the interpretation of the guidelines take place regularly. The BPIA occasionally brings industry concerns to the attention of the EPA and feels that these are usually taken seriously and addressed quickly. The BPIA also sits on the EPA's Pesticide Program Dialog Committee, along with high level representatives of health and environmental groups, the EPA and other industry representatives such as CropLife America, the Consumer Specialty Products Association, etc.).

The information and coaching on regulatory issues, as well as the contacts with independent regulatory consultants were mentioned as major benefits of membership in the BPIA for small companies with no experience in product registration.

The Sacramento meeting is usually an opportunity to interact with the California EPA. The BPIA has also sought to establish good contacts with the PMRA, often taking the opportunity of the NAFTA meetings to do so. With its focus on the US market and its fast and effective regulatory system, the BPIA has not sought to establish contacts with the OECD regulatory harmonization efforts.

A.2.e. Product quality and stewardship

Strong emphasis is placed on this aspect at the BPIA to help ensure user confidence in the products and to counter the perception of lack of efficacy, which is still a significant hindrance for biopesticides (the “snake oil” stigma, see the reader survey reported in issue 6 of the quarterly Canadian publication the Biocontrol Files). In practice, this simply means that new members must sign off on the association’s quality principles, which stress the importance of registering products through the EPA, PMRA or other equivalent system as a guarantee of product quality, efficacy and consistency.

These aspects have been essential to BPIA membership from the beginning. Beyond this, the BPIA has explored options for setting up industry quality standards (a “BPIA seal of approval”, for example). This would require establishing a common quality assurance and product stewardship procedures, obtaining and compiling affidavits from users on the quality and consistent efficacy of the products, compiling results of standardized, independent efficacy trials and, more importantly, submitting all the compiled data for independent auditing and certification on a regular basis. At this point, there is no strong consensus among the members to make the long-term commitment necessary for this process but it remains an active topic of discussion.

A.2.f. Networking, promotion and dissemination of information

The many general and committee meetings are considered quite useful by the BPIA members as opportunities to network among themselves and with stakeholders, share ideas, experiences and tips, obtain up to date relevant information and establish contacts for partnership, licensing or distribution agreements. Up to now the BPIA web site has been used mainly as a communication tool for its members, with the password-protected part providing easy access to minutes and presentations from the meetings. However, it is also intended to become increasingly a tool of communication with users and the public.

Information on and promotion of biopesticides to their potential users and to the public in general has always been a goal of the BPIA but in the past was mainly carried out through interactions with speakers invited to the BPIA meetings (e.g. organic growers, certifiers and distributors). More recently, promotion has become an active priority thanks to the accumulation of sufficient financial resources, the joining of the MeisterMedia group (publisher of several agriculture trade magazines) and the appointment of its representative, Rick Melnick as Chair of the Public Relations committee.

The priorities in this area are 1) to continue developing contacts with users through the member meetings, 2) to update the website with more informative content on biopesticides and 3) to commission professional articles on the role of biopesticides in dealing with resistance and residue issues and on the BPIA itself. As part of these priorities, the BPIA has also become a partner in the Plant Management Network, which has over 12,000 subscribers (many in academia). BPIA members have access to the password-protected portion of the PMN site and may become corporate members at a discounted cost. Discussions have also taken place about producing a regular newsletter.

The BPIA does not provide training or consultation services to its members and is prohibited by anti-trust legislation from carrying out commercial marketing activities. Therefore, it is essential that its public relations activities remain strictly educational.

A.2.g. Relations with public research organizations

The main public research organizations involved in independent testing of biopesticides are the IR-4 in the U.S. (see paragraph on IR-4 in Section B) and the Pest Management Centre in Canada. Representatives of both of these organizations regularly attend BPIA meetings and provide updates on their biopesticide testing and registration activities. The BPIA also regularly attends IR-4 meetings and has repeatedly spoken in favour of the biopesticide program of IR-4. No representations are made in support of specific biopesticides or projects, respecting the independent, publicly funded nature of IR-4.

A.3. Non-BPIA U.S. microbial product registrants

Although a full inventory of companies active in the U.S. biopesticide sector has not been carried out, a survey of EPA registrants of microbial products indicated that only about one-third are members of the BPIA. A small subset listed below and approved by the Pest Management Centre was targeted to discuss their awareness of the BPIA, potential reasons for not joining and, where appropriate, interest in the Canadian market.

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The confidential raw discussion notes on the conversations are provided in Appendix 3. A variety of responses were obtained from the small sample of companies approached. One declined to comment. In two cases, the senior management person approached had never heard of the BPIA. A brief description was usually provided and elicited some interest. In another case, the person already knew of the BPIA. The minimum annual membership fee of \$1,000 was generally seen as prohibitive for small companies, particularly since, in order to adequately take advantage of membership in the BPIA, it is essential to commit time and additional financial resources to attend the meetings.

In one case, the company had been a BPIA member prior to the setting up of the membership fee system. They did not feel that the amounts set for the annual fees were excessive but objected to the requirement to divulge annual sales to determine the correct fee. They felt that this was information they did not wish to share with competitors. Although it might be possible to base the membership fees on some other measure of a company's size (e.g. number of employees, as used by BIOTECanada for its smaller members), sales volume is frequently used as the determinant (BPIA, IBMA, PIC, CropLife Canada).

The financial and time impediments mentioned above are of particular relevance to the Canadian sector since essentially all the Canadian companies are similar in size to the ones approached in this section of the study. However, it is clear that several small companies have also found it beneficial to be members of the BPIA.

A.4. International Biocontrol Manufacturers Association

As mentioned above, the IBMA is broader in scope than the BPIA, with more categories of products covered and with an international membership. Like the BPIA, its website attests to many ambitious intentions covering most of the numbered points listed earlier.

Reaching IBMA representatives and member companies has proved somewhat more difficult than for the BPIA but good discussions with the following people provided a solid overview of the IBMA structure and activities. The confidential raw discussion notes on the conversations are provided in Appendix 4.

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A.4.a. History and administrative structure

The IBMA was founded in 1997, thanks in great part to Bernard Blum's efforts. Its initial objectives, as stated by Mr. Blum, were very similar to those of the BPIA: adoption of a code of conduct for biocontrol manufacturers (to be signed and undertaken by all members), establishment of a dialogue with regulatory authorities and promotion of biological pest management. Several overlapping member groups are organized by product ("professional") categories (invertebrates, microbials, semiochemicals, bioactive substances) or by country (France, Italy, Germany and the UK). As a result, most companies are members of multiple groups within the IBMA.

The IBMA has a volunteer President and Treasurer (currently Michel Guillon) and covers the part-time salaries of a secretary and a regulatory specialist (Ulf Heilig). These are appointed by the Executive Committee, made up of the chairs of the professional and country groups. The membership structure distinguishes between three categories of members: manufacturers (sales-based fee scale of US\$500 – 3,000), distributors (full member: \$500, associate member: \$250) and Others/Consultants (\$250).

A.4.b. Members

The IBMA membership comprises several European subsidiaries of the larger U.S. biopesticide companies (Valent, Certis, Becker Underwood, Suterra, AgraQuest); a large number of small biocontrol companies (mostly European) dealing in all the categories of products mentioned; and, unlike the BPIA, a few agrochemical companies of widely different sizes that have a minor interest in biological pest management (BASF, Chemia, Nufarm, SEDQ, SumiAgro France). A few regulatory consultancy firms are also members. While the advantages of joining the IBMA are presented to potential members when the opportunity arises, no organized effort is spent on reaching non-members companies and encouraging them to join.

A.4.c. Regulatory activities

There are fewer regulatory consultants in operation in Europe, reflecting perhaps, the typically drawn-out process of registering biopesticides. This is also reflected in the IBMA membership: JSC international, Technology Science Group, and two other consultants. One of these two, Ulf Heilig, was retained by the IBMA in 2005 on a part-time basis to coordinate and spearhead the association's regulatory activities, under the supervision of the Promotion and International Relations Group, headed by Bernard Blum. These activities are concentrated mainly on the E.U. regulations. These are widely felt to be based too much on chemical pesticides and to be inadequate for biologicals, creating major hurdles for biopesticide registrations. IBMA members expressed frustration, in this consultation and on other occasions, about the lack of success of the IBMA in establishing a constructive dialogue with the regulatory authorities and in effecting improvements in the registration system. The IBMA regulatory activities also focus on the OECD (participation in the meetings of the Pesticide Working Group and the Steering Committee on Biopesticides). Various IBMA members are also actively involved in the REBECA project, funded by the European Commission to assess the hurdles to biopesticide commercialization in Europe. The project is carried out by a group of small companies, headed by Ralf-Udo Ehlers of E-Nema, in collaboration with Ulf Heilig. This project is currently half-way through its two-year span and its participants are hopeful that it may result in improvements in the biopesticide registration system, which is seen as the main hurdle.

One of the IBMA's OECD-related regulatory activities was concerned with the inclusion in the new guidelines of beneficial insects in addition to biopesticides. Efforts, coordinated by the IBMA's Invertebrates Group to have these dealt with separately have not succeeded, to the frustration of some. In this context, two of the respondents, both from small beneficials companies indicated that their larger

competitors have made it clear that they are happy to go along with the increased regulatory burden, which they feel able to handle, in order to gain a competitive advantage over the smaller companies.

Despite its desire to represent the biocontrol industry worldwide, it is clear that, where regulatory issues are concerned, the IBMA's attention is monopolized by Europe. Its activities in that field do not overlap with those of the BPIA in the U.S., nor is the IBMA involved with Canadian or Australian regulatory issues.

A.4.d. Product quality and stewardship

The IBMA appears to have gone further than the BPIA in this area. In addition to the initial IBMA charter and code of conduct that its members must sign, the IBMA is actively involved in the Eurepgap organization (a "global partnership for sustainable agriculture"). Eurepgap comprises several large European grocery chains and provides a label of quality for agricultural producers worldwide. In addition to various food safety criteria, minimized chemical pesticide inputs and integrated pest management play an important role in this label. The IBMA is also assisting, as a pilot project, the efforts of 10 of its members in obtaining the EMAS environmental quality label (European Commission Eco-Management and Audit Scheme).

A.4.e. Meetings, dissemination of information and promotion

In 2003, 2004 and 2005, Executive Committee and Annual General Meetings took place in Paris in November/December of each year. In addition, a special conference on "Bringing science to practice" took place in Béziers, France, in April 2003. Starting in 2006, it is intended that the annual meetings will take place in the fall in Lucerne, Switzerland, at the Annual Biocontrol Industry Meeting.

While the IBMA keeps track of and announces other meetings of potential interest to its members, its participation in other meetings is largely limited to those directly related to biocontrol. The IBMA's efforts at reaching users, scientists and other stakeholders were, until recently, like those of the BPIA, mainly confined to inviting selected individuals to make presentations and participate in panel discussions at its conferences. The association does not appear to be actively involved in representing its membership (or biocontrol in general) in meetings of other agricultural sectors. The breadth of its product range and geographic scope would make any effective effort in this area difficult to manage.

As for the BPIA, dissemination of information to the members and exchanges among them take place through the public and password-protected parts of the web site, through the presentations, panel discussions and networking at the IBMA meetings, the teleconferences and exchanges of the Executive Committee, within working groups and through informal communications among individuals. No particular effort is expended in promoting the industry to the public or politicians. Promotion of the industry to other stakeholders has recently become more of a priority and a partnership with the magazine *New Ag International*, published in English and Spanish has been established.

The number of people reached concerning the IBMA is much smaller than for the BPIA but whereas the BPIA comments were all very consistent (and enthusiastic), IBMA members did not shy away from expressing some frustration with the association. To some extent, this may be a more frank expression of opinion, reflecting the lack of progress on regulatory issues. The BPIA members may have felt it more important to present the best possible image of the organization in this consultation but the pride in the BPIA's achievements was clearly tangible in most of the people reached.

A.4.f. Marketing and training

Although these two points are mentioned as activities of the IBMA, they are very limited in scope. The IBMA did facilitate training of staff from a member company but other than this, there has been little call for that kind of assistance from the members. On the marketing side, IBMA has cooperated with the German Technical Cooperation agency (GTZ) on a project titled “Commercialization of biopesticides in South-East Asia”. The project has resulted, among other things, in the development (with German partners, including the pharmaceutical giant Bayer) of a rodent-specific protozoan biocontrol agent, its transfer to local production, its registration in various countries of the region and its widespread implementation.

A.5. Other organizations

The confidential raw discussion notes on the conversations of this section are provided in Appendix 5.

A.5.a. Association of Natural Biocontrol Producers

Only two ANBP members have been approached and both felt that the organization is somewhat ineffectual. A lack of involvement from the members was blamed by one. Annual meetings tend to gather the same small group of active members every year. While the organization has a relatively large membership base, the funds raised through the low level dues essentially cover the travel and logistical expenses of the Executive Director and little more. The Executive Director is a retiree and volunteers most of the time he spends on ANBP business.

The post 9/11 establishment of the Department of Homeland Security and the increased scrutiny of live biological shipments created difficulties that Canadian producers have had to overcome and that the ANBP was largely powerless to simplify. However, generally speaking the North American regulatory framework for live beneficials is seen as quite flexible and, at least to the relief of some, uninterested in following the lead of the OECD in registering beneficial biocontrol insects.

Discussions with ANBP members also indicated indifference to the possibility of establishing a Canadian biopesticide industry association. The ANBP does not have contacts with the BPIA and would not expect to have any with a similar Canadian association either.

A.5.b. Spray Efficacy Research Group International

The discussion with a representative of the SERG-I suggested a marked lack of enthusiasm for the establishment of a Canadian biopesticide industry association. The assumption that there would be some measure of interest was predicated on the fact that the mandate of SERG-I is mainly coordinating forest pest management research and efficacy testing and that a Canadian biopesticide industry association could be a useful resource to the group. However, SERG-I includes manufacturers of forest pest management products as associate members. It also has an interest in regular pest management activities in Canada and helps its member organizations and participating researchers with certain regulatory issues (e.g. obtaining research permits for products in development or emergency authorizations for outbreaks that fall outside of the approved labels).

This suggests a potentially greater overlap than anticipated between SERG-I and an eventual Canadian biopesticide industry association, at least in the forestry sector.

A.5.c. Plant Inoculants Canada Inc.

PIC was founded in 2003 to represent the inoculant industry. Its main priority was the establishment of a dialogue with the CFIA at a time when the agency started updating the regulatory system for the fertilizer industry. Membership is comprised of Corporate Members, commercial companies with annual sales over \$1M (dues of \$2,000); Associate Members, companies with less than \$1M annual sales and other organizations (dues of \$500) and Individual Members (\$50).

PIC also interacts with the CFIA by representing the biofertilizers industry in the broader industry coalition, the Canadian Fertilizer Products Forum.

B. Identification of benefits of representation by the Canadian biopesticide industry sector in consultations or other national or international fora

As part of this study, it was deemed important to identify recent and future instances where representation by a Canadian biopesticide industry association would have been or would be advantageous to the industry as a whole. Information gathered here was used in the consultation of the industry to give the Canadian companies some examples of what an industry council might do for them. It could also be used as a list of potential contacts and activities for an eventual biopesticide association representing Canadian companies.

The confidential raw discussion reports for this section are given in Appendix 6.

B.1. Pest Management Advisory Council

The Pest Management Advisory Council (PMAC) regroups key stakeholders in the field of pest management and public and environmental safety. CropLife Canada, the Canadian Horticultural Council, the Canadian Nursery Landscape Association and the Canadian Federation of Agriculture are entitled to a representative. Various environmental and consumer protection NGOs are also represented, as are various public health specialists. PMAC is regularly apprised of important development in the field of pest management and briefed by PMRA on its recent and upcoming activities. PMAC comments and recommendations are relayed directly to the Minister of Health by the PMRA staff. PMAC played and continues to play an important role in the implementation by PMRA of the new Pest Control Products Act. Until two years ago, the biopesticide sector was represented on PMAC by a single company representative and by a pheromone expert from university. In 2005 a somewhat broader cross-section of academic biological pest management representatives was invited to sit on PMAC. When called to discuss this project, a representative of PMRA in charge of coordinating PMAC emphasized the importance attached to securing adequate representation for the biopesticide sector. Since appointments are reviewed every two years, new appointments are being made on a regular basis. While the Minister has complete discretion as to who is invited, it is clear that if the Canadian biopesticide sector decided to establish an industry association, a representative of this group would be welcome on PMAC anytime as an observer and as soon as feasible as a full member.

PMAC also occasionally sets up working groups. In 2005, the Low Risk Working Group (LRWG) was charged with developing recommendations for a new regulatory framework for low risk pest management products. Various biopesticide companies participated, as well as conventional and organic agriculture representatives. While the efforts of the group were directed at products that are neither microbials nor pheromones (which have their own regulatory framework), the group recommended that the low risk designation be applicable to all products that meet the low risk criteria, including most pheromones and some microbial products (e.g. baculoviruses). Had a biopesticide industry association been established at

the time, both this working group and the industry would have greatly benefited from the participation of its representative.

B.2. Other consultations on regulatory issues

Among other opportunities where a Canadian association might have helped coordinate a collective industry response is the recent re-evaluation of *Bacillus thuringiensis* products, the first re-evaluation of a biopesticide in Canada. The potential for production of enterotoxins by Bt products was weighed against their long history of safe use. The decision to re-register the Bt products was made in consultation with the EPA and E.U. regulators and is to be re-examined on a regular basis. In situations like this, an industry association could coordinate not only the industry comments but also any scientific studies that might be necessary to address the issue in future re-evaluations.

The recommendations of the LRWG mentioned above were approved without modification by PMAC in November 2005. Following these, the PMRA set to work on new regulatory options for low risk products. They have now completed the drafting of a regulatory proposal, which will be shortly posted on their web site for comments.

In a similar vein, it was indicated that the PMRA will also be issuing an update on the pheromones guidelines shortly, with an eye to eventually integrating them with the new low risk products guidelines once these are finalized. In the slightly longer term, an update of the microbial products guidelines can also be expected. Keeping up with these changes on behalf of the industry and providing coordinated feedback from the industry is what an association would be uniquely positioned to do.

The meetings of the Federal, Provincial and Territorial Committee on Pest Management and Pesticides were also mentioned as potentially useful venues for the biopesticides sector.

Internationally, a Canadian biopesticide association might (if it had the financial means and members' mandate to do so) be able to represent the Canadian sector and gather information on its behalf at various meetings and consultations such as the work on biopesticides of the NAFTA Technical Working Group on Pesticides and the OECD Biopesticide Steering Group.

B.3. Conventional horticulture growers

A biopesticide industry council would also be able to represent the sector in other Canadian events and consultations involving the users and growers, such as the various commodity-based crop profile and risk reduction initiatives involving the PMRA, the PMC and the relevant stakeholders; the PMC's minor use prioritization meetings; as well as its risk reduction technical steering committee meetings.

A number of people involved in pest management issues in the horticulture industry were contacted to discuss their views about a potential biopesticide industry association. They all felt that such an association would be a valuable resource for the growers. There was agreement that representation of the biopesticide sector at grower and stakeholder meetings to present new products and discuss issues of mutual interest would be a very positive development. Participation of the industry association to the Pest Management Advisory Council was considered indispensable, as was its participation, along with its member companies, in the Minor Use prioritization meetings of AAFC's PMC. The respondents also identified many sectors with a strong interest in biopesticides that carry out pre-prioritization consultations where biopesticide sector representation would also be very beneficial. In light of the large number of such meetings occurring over a relatively short period, a Canadian biopesticide industry association might have to concentrate on compiling the dates, locations and themes, and coordinating with member companies to determine who would be interested and able to attend. The grower groups

mentioned as particularly interested in keeping up with biopesticides were the Ontario Fruits and Vegetables Growers, the Wild Blueberry Producers Association (WBPA) of Nova Scotia, the greenhouse vegetable sector (mainly the Quebec region, the Ontario Greenhouse Vegetable Growers and the BC Greenhouse Growers Association), the greenhouse flower sector (mainly Flowers Canada Ontario) and the Canadian Nursery Landscape Association. However, this is but a small sampling of the potentially interested organizations.

People contacted:

Removed: confidential

B.4. Organic agriculture representatives

The following contacts were also made with the organic agriculture sector.

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In addition to their interest in the availability of a biopesticide industry association as a resource, these respondents also pointed out that with the new Canadian organic standards coming into effect, the General Standards Board was currently in the process of establishing a technical committee to establish a Canadian Permitted Substance List, equivalent to the Organic Materials Research Institute (OMRI) list in the U.S. They all agreed that a biopesticide industry group would be a valuable resource for this committee's work.

B.5. IR-4

The US IR-4 program was contacted to discuss interactions with the BPIA and the benefits observed for this kind of industry association. The representative indicated that a biopesticide industry group may indeed facilitate contacts between its members and the researchers involved in the IR-4 program, thus increasing the likelihood that the members' products be included in projected trials. However ultimately, the researchers must be convinced of the benefits of undertaking a particular study and apply for IR-4 funding for it. From then on, the company's role in the independent testing is, of necessity, limited.

C. Development of the consultation plan for the Canadian biopesticides sector

A list of Canadian companies with a major, minor or potential interest in biopesticides was established. These included developers, manufacturers, registrants and distributors of biopesticides (Canadian companies and Canadian subsidiaries of foreign companies). Consultants in biological crop protection, biopesticide registration and market analysis were also included.

From this list, a subset to be called was selected in consultation with the PMC during a meeting on March 1st, 2007. The points to be addressed were also discussed with the PMC at that time.

D. Consultation with the Canadian biopesticides sector

D.1. Notes on the approach methodology

The discussions with the Canadian companies aimed to:

- establish each contact person's awareness of options available abroad and their benefits;
- outline what similar activities could mean in Canada;
- discuss the perceived need for sector representation in Canada;
- outline possible options for Canadian sector representation and the contact person's preference;

- discuss the perceived cost (and time investment) of setting up these options; and
- obtain a realistic assessment of the company's capacity to contribute (financially and through involvement and participation).

Although key representatives were selected for each company, the goal of the consultation was not to secure a company's "official response" or "position" but to discuss the options and preferences openly with the respondents.

Initial calls were made, starting with regulatory consultants and contact persons with whom a positive personal rapport had been established in the past. In this all-telephone approach, the background information that needed to be conveyed to the respondent was verbally communicated. This approach is exemplified in the first few raw discussion notes of Appendix 10. An assessment of the validity of this approach after a few calls suggested that another approach might work better where the essential background information, such as the description of the project and its goals, the typical activities of other associations and the opportunities for representation of the biopesticide sector in Canada, was communicated to the recipient by E-mail (see Appendix 8). The discussion about potential interest in, and preferences for, a biopesticide industry association was carried out over the telephone on a subsequent day. Several of the less interested respondents had only cursorily read the message and required further briefing over the telephone but most of those genuinely interested in a Canadian biopesticide industry had read and understood it, which facilitated and focussed the subsequent discussions.

In cases where no E-mail address was available, initial telephone contact was established with an appropriate respondent who was then given the choice of a short verbal summary of the information or to be sent the E-mail outline before calling back.

D.2. Overview of responses of the Canadian biopesticide companies

An overview of the responses in tabular form is provided in Appendix 9. Generally speaking, the responses were very positive. Almost all respondents (24 out of 27) were either very interested in having an industry association and willing to get involved in establishing and managing it (13 respondents) or moderately interested in it (11 respondents).

Among the respondents that were moderately interested, one was an agrochemical company with an interest in biopesticides and may consider joining if the association got established. Others were quite interested but too small and in too tenuous a situation to sustain the financial and time commitment of active involvement in a new organization. The rest were well-established companies with a moderate interest in an industry association, likely to join and participate in it if it got established but unlikely to get very actively involved with its establishment and management.

Of the reasons cited for the companies' interest in establishing an industry council, the main one was the development of a dialogue with the PMRA, with a hope to improve or streamline the registration process. In this respect, it should be noted that while improved dialogue with the PMRA would, in all likelihood, effect some objective improvements, it would also foster better understanding (and possibly acceptance) of the process by the companies. Other priorities such as networking within the industry and with the users and public education were also considered important by several people. The opportunity to interact with other companies in the same or similar situations and the opportunities for new partnerships were mentioned as quite important by a few respondents.

Not all points of discussion were systematically broached with each respondent, sometimes because of actual or perceived lack of time. In other cases, particularly concerning the specific priorities for an

industry association (regulatory issues, networking within the industry and with users, public education) or the specific structure of an eventual association (membership dues, office support, or not), enough responses have been obtained, showing a variety of views with no firm consensus among the strong supporters of an industry association. These points would clearly not be decided through this consultation, nor do they call into question the feasibility of the association. They would simply need to be discussed in greater detail by the industry itself if and when it decides to move forward with the association.

D.3. Individual responses

This section contains brief summaries of the raw discussion notes that are provided in Appendix 10. They are organized within each subsection below by alphabetical order of last name. However, in Appendix 10 the raw notes are organized in chronological order of calls made to facilitate sequential reading. The raw notes were made in French or English, depending on which language was used in the conversation.

Section deleted due to confidential nature of responses.

D.3.c. Registration consultants

The Canadian registration consultants approached indicated little interest in the idea of a biopesticide industry association. Analysis by the BPIA indicated that the participation of regulatory consultants was perceived to be an important factor in the success of the Alliance, in addition to being beneficial to the consultants themselves since it gave them increased exposure to potential clients. Of course, all BPIA members and, indeed, all recent EPA biopesticide registrants, whether they realize it or not, benefit from the improvements in the guidelines and in their interpretation resulting from the good rapport established between the BPIA and the EPA. In that respect, the relative lack of interest in an eventual industry association on the part of Canadian regulatory consultants could be seen as a cause for concern for this association.

D.3.d. Pest management consultants with expertise in biocontrol

The same reasons that suggest mutual benefits in the participation of regulatory consultants in a biopesticide association also apply to pest management consultants. These consultants have, in the past, worked mostly for the greenhouse vegetable industry, helping them establish pest management programs based on beneficial insects and biopesticides. They provide scouting services and ongoing advice on how to adapt the programs. They are usually very supportive of biopesticide products, regretting only that so few of them are available in Canada, especially for insect control. They occasionally have the opportunity to work in other sectors and often get involved in applied research projects. Three such consultants were approached in this study, two in BC and one in Ontario. They all felt that it would be beneficial for them to participate in a biopesticide industry association if it got established. They would be able to better keep up with new developments in the industry and use that knowledge to improve pest management strategies for their own clients. They might also potentially gain new clients among biopesticide companies needing help with field testing. Their excellent rapports with the growers would clearly be an asset to an association looking to develop closer ties with its users and stakeholders.

E. Analysis of options and recommendations

Those in favour of a biopesticide industry association sometimes asked what would be the next stage. The response given was that should a sufficient number of Canadian biopesticide companies wish to establish an industry association, the results of this consultation will represent the first step towards that goal. These results, at least in executive summary form, will be made public, so all concerned will be able to gauge for themselves the level of interest within the industry. Since it is essential for the industry to take ownership

of this project and do its own organizing, the next step would likely involve a meeting of the interested companies to discuss how to proceed. At this point there is no commitment on the part of the Pest Management Centre to assist the process beyond the commissioning of this study, which is already a major step forward. However, further involvement is not ruled out either.

It is clear from the responses to the consultation that there is significant support for some form of industry representation among those Canadian companies approached. This consultation would have been very unlikely to discover an existing consensus on how to proceed and what form this representation should take. The variety of individual responses obtained on this topic confirms this. Nevertheless, it appears that a consensus among all those genuinely interested should be reasonably attainable. The easiest way to reach this consensus would be through a general meeting of the biopesticide industry, as discussed above. A meeting would likely yield such a consensus, as well as a clear action plan for the participants, provided it is well-organized and facilitated. This is explored in greater detail later in this section.

E.1. Options for joining an established association

While the IBMA admittedly started as a fairly centralized organization, it is apparently interested in becoming more akin to a federation of local associations. The IBMA and the BPIA have had formal discussions about their relationship. Following its “federation” mandate, the IBMA would like to include the BPIA as its U.S. group. What that would entail regarding the payment of membership dues and the support of the BPIA activities and Executive Director position is not clear. The IBMA does not appear to have provisions for support of regional offices. Not surprisingly, the BPIA prefers to retain its independence and maintain a relationship of sister organizations with the IBMA.

With respect to the Canadian biopesticide sector, both organizations would see it as a duplication of effort if the Canadian industry were to set up its own independent association. The strong focus on E.U. regulatory issues would make membership in the IBMA an unrealistic proposition for the Canadian companies. However, the possibility of joining the BPIA deserves a closer look. Almost all the BPIA contact people reached indicated that they would welcome new Canadian members. Many of the existing members are interested in registering and selling their products in Canada (several already have done so). Therefore, establishing a dialogue with the PMRA and contacts with the Canadian stakeholders would address the interests of both existing BPIA members and new Canadian members. Conversely, the BPIA could help new Canadian members register their products in the U.S. (which is essential for most of the Canadian companies) and interact with U.S. stakeholders in the same way it helps its existing U.S. members. As suggested by a few BPIA respondents, meetings could be held in Canada occasionally to facilitate these cross-border activities. A likely disadvantage in this scenario is that several of the small Canadian companies interested in an association would be unable to afford the BPIA membership dues and those who can, may dislike having those dues support a remote office and organization whose attention to Canadian issues can only be fractional at best.

A large majority of the Canadian respondents who were asked the question unequivocally preferred a Canada-based organization. Reasons mentioned included the importance of speaking to the PMRA as a Canadian organization as well as better opportunities for accessing public funding.

Of course, the establishment of a separate association in Canada would not preclude those who could afford it to also join the BPIA and, more importantly, it would not preclude the Canadian association from establishing partnership links with the BPIA. However, since the discussions with the BPIA members were held prior to those with the Canadian companies, the BPIA has not had a chance to discuss internally and formulate in detail what it could offer to the Canadian biopesticide industry if it should decide to get organized. Therefore, in fairness to the BPIA and in the interest of good future relations, if a meeting of

the Canadian industry is held to discuss the way forward, the BPIA should probably be invited to attend and given an opportunity to put their best case forward.

The option of joining a new “biopesticides branch” of CropLife Canada was mentioned by only one respondent. The possibility of CropLife Canada representing the biopesticides sector has been discussed informally in the past a representative of CropLife Canada and was broached again in the context of this study. In the initial informal discussion, the option was seen as probably unrealistic for practical financial reasons. While CropLife applies the principle of differential membership fees for its members, its minimal membership fee would be out of reach of most of the biopesticide companies and new bylaws would need to be established specifically for the sector in addition to a new representation structure. While this is not necessarily out of the question on the part of CropLife Canada, the biopesticide industry would be very unlikely to entertain this possibility for reasons of comfort and public perception. The industry usually promotes its products as reduced- or low-risk alternatives to chemical pesticides.

E.2. Challenges for a Canadian industry association

The limited amounts of time and money small companies have to invest in establishing, managing and participating in an association is an obvious challenge. However, this challenge is fairly well-defined. Comments collected in the consultation indicate good awareness of it among the highly interested respondents.

Another less well-defined challenge concerns the breadth of products potentially covered by a biopesticide industry association (see the discussion on defining biopesticides at the beginning of this document) and, more importantly, the variety of the markets they target, going from homes and gardens to greenhouses, fields, orchards and forests. This variety certainly poses unique challenges in terms of the kinds of stakeholders an association may need to interact with and the kinds of promotional and educational strategies it might want to develop.

The experience of the BPIA indicates that regulatory issues are one area where common purpose, focussed objectives and tangible results are easier to come by for a new association, whereas other objectives, while also important, pose more difficulties. However, it was noted that the strong focus and the successes of the BPIA on regulatory issues also had a negative impact for the other issues of interest. Members tend to have their regulatory staff attend the meetings, which does not allow them to take full advantage of the opportunities offered to develop contacts with growers and other stakeholders.

E.3. Options for financing and structure of an industry association

The BPIA only started collecting membership dues relatively recently. Prior to that, it did not support a central office. The Board and committee members discussed and set the priorities and carried them out between them. To a large extent, that is still how the organization functions today. The small amount of time that the Executive Director is contracted for allows for a greater coordination of activities and meetings but still leaves much of the work to the members.

The Canadian industry may also choose to organize itself without a central office. A few respondents have expressed support for that option. The structure in that case would be that of an unincorporated association, which is very easy and flexible to set up. The founding members could simply decide their own criteria and conditions for membership, form a Board or Executive Committee, agree on a set of priorities and action plan and allocate the tasks among themselves. Meeting and travel costs would be shared among the members. Although all options will require commitment and involvement from the members this one would certainly demand the most.

If the industry decides that it needs a central office, the question becomes what exactly is needed and how to support it. While large industry associations (e.g. CropLife Canada, BIOTEC Canada, etc.) need permanent offices for multiple staff, the biopesticide industry is too small to require anything like this. The ANBP and BPIA offices, for example are simply the personal offices of the current Executive Directors. This reflects the relatively small scale of the office operation and has the advantage of flexibility. The part-time Executive Director position is not a lucrative one but allows the development of extensive contacts in the industry and with the stakeholders, which can be advantageous. The “roving office” model anticipates and accommodates the fact that the Executive Director position will likely rotate on a regular basis. The ANBP situation described in section A.5.a. also illustrates the extent to which an association with limited financial means may come to rely on the Executive Director volunteering his or her time.

Another possibility for a central office could be to have a larger organization host it. This is the case for the new BPIA Executive Director who works most of his time for the BPIA member company California Agricultural Research Inc. (a private research contractor) and who applied for the position of BPIA Executive Director with the support of his employer. Similarly, a not-for-profit, government or academic organization with a mandate to help the biopesticide sector and the means to maintain a larger office might also host an industry association office. Such arrangements not only help with office logistics but can also keep the representative of the industry association better connected to the relevant stakeholders and events, thus making her or him more effective. The Biocontrol Network, for example would have been well-suited to offer this kind of arrangement to the industry, as some respondents pointed out, and could be again if ongoing efforts to secure new funding are successful.

The possibility of the industry submitting a business case to justify the need for public seed funding for an association office and/or executive director was mentioned in the consultation. This possibility was not explored further in this study because such an application for funding would likely target Agriculture and Agri-Food Canada, sponsor of this study.

With increased organization and financial responsibilities, the association may also wish at some point to consider registering as non-profit corporation.

E.4. Removed: confidential

E.5. Removed: confidential

F. Industry Canada Technology RoadMaps Program

The possibility was examined that Industry Canada might be able to assist the Canadian biopesticide industry in getting organized. The only potentially relevant program found was the Technology RoadMaps. This program aims to facilitate industry-wide technology roadmapping exercises where companies operating in a rapidly changing sector collaborate to analyze and anticipate their future markets (5-10 year horizon). The goal is to identify the critical gaps and roadblocks in technology and knowledge and assess how to address them collectively and in collaboration with government and university research partners.

The TMR process appears well-suited to the biopesticides sector which must routinely analyze market needs 5-10 years into the future, if only because of the registration timelines. Significant technological obstacles have also been identified in the past, such as mass production, formulation and packaging for improved shelf life and efficacy, identification and environmental tracking of products, etc.

The program is not exclusive to Industry Canada although they would be interested in helping set up a TRM group for biopesticides if asked by the sector. It may be worthwhile for the industry to discuss, as part of its initial discussions on the priorities and action plan for a new association, the possibility of tapping into this program to develop a better collective understanding of the future markets for biopesticides and the scientific and technological priorities and roadblocks in getting there. A request for assistance to Industry Canada may actually be relayed to AAFC and other departments concerned. Once secured, the funds would help support the work of a government 'champion' for the process with a small secretariat, and provide some support for meetings.

Attempts may be made to contact the TRM specialist for the field closest to biopesticides: nutraceuticals, to obtain feedback on the usefulness of the process as well as more information on how to implement it. Similarities between biopesticides and nutraceuticals include a large number of companies ranging from very small to medium size, a strong link with agriculture as well as regulatory oversight by Health Canada.

The possible interest of the biopesticides industry in establishing a TRM could be a topic of discussion at an industry association meeting.