

Reprinted with permission from: Meeting of Leafy Spurge Consortium Lethbridge, Alberta-Canada, March 10, 1994, unpublished.

Meeting of Leafy Spurge Consortium

Notes taken by DR. ROSEMARIE DECLERCK-FLOATE and NEAL R. SPENCER

Meeting attendees:

Peter Harris (Meeting Chair)	Agriculture and Agric-Food Canada, Lethbridge
Rosemarie DeClerck-Floate	Agriculture and Agric-Food Canada, Lethbridge
Rick Butts	Agriculture and Agric-Food Canada, Lethbridge
Alec McClay	Alberta Environmental Centre Vegreville, Alberta
Neal Spencer	USDA/ARS Sidney, MT
Barbra Mullin	Montana Dept. of Agric. Helena, MT
Jerry Marks	Chair, Bio-weed Committee MT
Bob Richard	USDA/APHIS Bozeman, MT
Jim Story	Montana State University Corvallis, MT
Allen Sturko	B.C. Ministry of Forests British Columbia

Executive summary

Representatives from various agencies which have been major contributors/funders of biocontrol of weeds projects involving western Canada and the U.S. met at the Lethbridge Research Station March 10, 1994. The objective of the meeting was to open communications on how best to structure and promote consorted liaisons among agencies contributing to various weed biocontrol projects. Peter Harris explained that the tightening of agency resources, coupled with the high cost of research requires new and innovative management techniques. The formalization of inter-agency consortia for the project funding will help sustain current and future activities in this area. Current consortia (i.e. knapweed and leafy spurge) vary in their level of cooperation among member groups from good to poor. **Increase in the cohesiveness of each weed consortium assists program funding and increases funding stability. They provide an important forum for setting weed biocontrol priorities affecting the research programs (i.e., choice of insects to be screened, monitoring and distribution needs, etc.). The consortia increase communications on member agency activities (research and other). The intent of the consortium concept is to: 1) promote the research on a targeted weed; 2) develop a stable source of funding; and 3) provide an extended base for the research and program needs of the group members.**

A consensus was reached by the group on the organization of current and future weed biocontrol consortia. It was suggested that the following format be followed.

1. Agencies interested in the biocontrol of a particular weed and willing to contribute funds or in-kind service will meet and form a consortium.
2. Members of the consortium will form a managerial group to supervise the research.
3. The consortium will designate a chairman who will liaise on behalf of the consortium with the overseas research effort on affairs associated with the weed biocontrol project. The chairman will keep all members of the consortium informed on the project, and communicate with the group as needed.
4. Consortium members will set priorities on their weed biocontrol project (i.e., choice of insects to be screened).
 - i. The chairman will then approach the overseas research lab with the proposed screening plan and ask for input on its feasibility and for a funding estimate.
 - ii. The consortium members will decide on their individual contributions and attempt to fund the project as estimated or ask for a revised estimate based upon available funding.
5. A formal agreement between the consortium and the foreign lab will be prepared and signed in good faith by a chief administrator or executive member with signing authority from each contributing agency and the European agency. Such an agreement will be prepared yearly because of the annual fiscal systems of all agencies involved. The agreement will include items such as consortium priorities for screening agents, choice of manpower for work (i.e., whether a graduate student or professional entomologist will conduct screening) or any other details regarding the contract work to be carried out by IIBC or Montpellier. The contents of the agreement will depend on the consortium involved, and should be flexible. Any changes to the agreement such as the addition or deletion of an agent from the screening list, should be agreed to by all parties.
6. Each member agency will form its own legal contract with the foreign lab according to the signed agreement.
7. The membership organizations and goals of each weed biocontrol consortium will be decided within each group and will depend on the needs and interests of the agencies involved. *Hence each consortium will be unique.*

I. Topics

- A. Objective
- B. Stabilization of inter-agency contact
- C. Funding
- D. Projects extremely expensive
- E. Need for consorted liaisons in regards to funding and planning
- F. Knapweed – good cooperation
- G. Leafy Spurge – poor communication among groups
- H. Discussion

1. **Barb** – “What is legal status of consortium?”
2. **Peter** – In past ad hoc – to date no legal status. In future each project has leader/ designate to decide on priorities, amounts of contribution, and signing by each agency. Won’t hold up in courts; however, more formal and may prevent groups from withdrawing.
3. **Al** – concern – changes in funds between years. (i.e., government changes, reductions in funding).
4. **Peter** – 1 year agreement.
5. **Peter** – Discussed insect choice priorities for leafy spurge. Decided there was not a need for another seed feeder, because leaf /root feeders already control seed. Once project discussed by consortia members; set insect priorities – tell Dieter and request an estimate from him. Dieter’s financial year – April 1.

There was discussion on the role of graduate students in screening programs. BC feels that they should not fund the screening of an agent that does not look promising, regardless of whether it is part of a graduate student’s project. A suggested way around this problem is to pay students to work on screening during regular hours. They can then work on the ecology of other agents for their thesis on their own time. This would be written into the agreement between the consortium and foreign lab. It also was pointed out, that what matters most is that the overall goals of a project are met, regardless of how they are achieved (through graduate student or other labor).

6. **Al** – Will not fund graduate students to screen agents that do not look promising or are not working out. “Can a potential agent be dropped by a student easily or do they need to continue to complete a thesis?”
7. **Peter** – Not all projects have graduate students.
8. Changes in foreign lab system.
9. Need to know limits for host range.

10. **Rick** – Have students work regular hours – initial screening, then work on ecology, other agents, on own time.
11. **Peter** – If TAG will not set limits for host range, then consortia should based on public concern.
12. **Neal** – Funding needs for both Montpellier and IIBC need to be considered to obtain best program options. Another suggestion is that the consortium decide on the best options regarding which European agency to contract on each project. For instance, climatic requirements for one funding group may mean that the ARS-Montpellier lab would be best suited for the collection and screening of some agents. Funding underwritten by the USDA/ARS will materially assist and make possible some projects that otherwise would not be conducted.
13. No problem with *Hieracium* project – recent communication between Montana and foreign lab.
14. **Barb and Al** – Problems with timing in government budgets. (i.e., BC-leg-meet in March/April. Montana-winter /spring).
15. APHIS is able to *only* fund knapweed and spurge.
16. **Al** – Consortia members should be opportunistic, too. (i.e., take advantage of new, extra insects).
17. **Alec** – Need input of foreign lab (i.e., what is possible in terms of priorities).
18. **Bob** – Need to know details – (i.e., habitat specificity).
19. **Peter** – Already has this information from foreign lab.
20. Who gets information in consortium – according to Peter everyone does, but no response to the information sent out by Peter.
21. **Bob and Al** – Complaint on vagueness of budgets – expressed a desire to have the foreign lab budgets broken down by insect, as it helps them sell the project to their agencies, and make the break-down of funding less vague.
22. **Rick** – Dropping insects may not work at the individual member level, but at consortium level.
23. **Alec** – “Are there really savings by cutting insects if Dieter still has to run program?” Other factors than money as to how fast results are obtained (i.e., technical problems, etc.).
24. **Al** – Problem: when Dieter adds insects.
25. **Rose** – Solution: Dieter should ask consortium and it decides.
26. **Alec and Rick** – Should not matter if Dieter adds insects or if students study something else – as long as goals are met and he delivers on rest.
27. **Peter** – The consortium also will provide a forum for deciding on which insects to drop from a screening list. It was pointed out that by dropping an insect, there may not be savings in the same year of the cut, but in the long term.

Discussion

Need to get groups together yearly. If consortium was priority group (i.e., Cooperative Regional Research Projects (CRRP) in US). Can get money from government for travel-network. Formalization of consortium process. Agencies sign executive with signing authority – obligate funds. Montana – Leo – Montana Weed Trust Fund, BC – a director, Ag Canada – someone above Peter, and APHIS – Lloyd Wendell. (i.e., Bernie S. – a show of good faith). Montana – Bio-weed Coordinating Committee Jerry M.) – gives advice/information to Montana State Noxious Weed Fund Committee. It was suggested that the consortium members meet regularly to discuss issues. Each consortium should meet separately, but several consortium meetings can be held near the same time (i.e., many members will likely belong to several weed consortia and it would be difficult for them to travel repeatedly). If the consortium is a priority group, there should be no problem getting agency funding to travel to meetings.

1. **Bob** – Problem with Dieter going outside of consortium to get funds. Important that Dieter recognizes and deals with consortium.
2. **Al** – Problem with general pool of money – agency doesn't know where money goes – problems with splitting insects. Consortium decides who gets what insects – best way to distribute insects (i.e., rearing centers) – maybe can garner money for rearing. Problem with some people giving money to project and don't get insects immediately.

The group discussed problems associated with dividing insects that are shipped for release among consortium members. A suggestion is that the consortium decides ahead of time how the insects will be divided, and possibly designates rearing centers. The order of insect receipt perhaps can be written into the agreement each year, and should help prevent duplicate funding for the collection and shipment of the same agents. The consortium also may be a good vehicle for acquiring funds for NA rearing of insects. Concern was raised about entrepreneurs getting involved with weed biocontrol purely for profit. This seems to be more of a problem in the US than in Canada. The consortium would provide leadership. Funding would come from each agency directly. The big picture comes from the consortium, funding goes direct from the funding group to the overseas lab.

3. **Bob** – Tough to get group to contribute to general good vs. self gain.
4. **Neal** – Layout division of insects at beginning of agreement – consortium. Also stated that ARS would contribute to a weed problem by taking a portion of a program and conducting the overseas research through the ARS Biocontrol Lab – Europe.
5. Consortium can solve problem of multiple funding of same collection. Montana Weed Council – concern. Dieter should be saying, “Why don't groups wanting insects work together.
6. **Peter** – Come up with agreement and individual agencies send own checks /contracts to Europe.

II. Structure of consortium

- A. **Bob** – Suggested that a concept paper by Peter be presented at spurge meeting in Montana in July. It was agreed by all present that Peter Harris present a paper on the consortium concept (aims and objectives) at the Leafy Spurge Symposium in Bozeman, Montana, July 26-29, 1994.
- B. Consortium – Makes decisions on future directions. A consortium will be developed for each weed target. Membership is to be based on contribution in funds or kind (plants, research, etc.). Members must play an active role. Each project (consortium) would have a project leader. Consortia members also will be able to help foreign lab by providing, through a networked effort, native plant species for host specificity tests. It was suggested that the rearing of some of the rare or difficult-to-rear native species could be contracted out to places such as the Center for Plant Conservation, St. Louis Botanical Gardens. Contracts with the center are about \$5,000.00 US per year.
- C. Meetings – All weed consortia meet at the same time (with personal conflicts taken into consideration) and place.
 - 1. **Peter** – Consortium – important to meet first – can decide on other issues. (i.e., weed impact studies, getting test plants) – want action from consortium members – don't want hanger-on's with hands out.
 - 2. Cooperation on post-release through consortia.
- D. The consortia also can be vehicles for research collaboration and the production of joint publications. It must be realized that research and operational projects may have different goals and will require different release site designation, and perhaps different methods of data collection. Intent should be presented at the beginning of a weed biocontrol program to the consortium. Other areas where the consortia can be of value is in the coordination of releases, and post-release monitoring and impact studies. Through the consortia, realistic, standardized sampling plans can be produced for general distribution to those involved with the program. This will aid in later data comparisons.
 - 1. **Bob** and **Al** – Careful that don't get too complex in requests for data collection research projects vs. operational end. Goals different from provincial vs. feds.
 - 2. Must point out bottom line at beginning – i.e., need for publications
 - 3. **Neal** – “Purge-Spurge Database” on CD-ROM disc – papers from spurge symposium – information (chemical, extension publications, etc.). First version to be given out on July 26, 1994 at Leafy Spurge Symposium in Bozeman.

III. Native plants for screening

- A. Discussions

1. **Bob** – Botanical gardens – contract (APHIS) to get spurge plants (also Texas).
 - i. APHIS could not help with hound's tongue (*Cynoglossum officinale*) – but maybe other consortium members can contract Center for Plant Conservation in St. Louis, Botanical Gardens – contract Botanical Gardens – \$5,000/yr.

IV. Post release monitoring

- A. Provide basic data at least (insect liberations in Canada). The consortia can facilitate the compilation and exchange of release data. Both the US and Canada (local and federal) have access to compatible database programs (e.g. Paradox, dBase IV), hence this plan is quite feasible.
- B. No database system in Ottawa – even though send release data to them – also do not tract establishment.
- C. Database APHIS uses is Paradox – Fields/Files can be exchanged with dBase (very compatible).
- D. Want flexible system – (i.e., if new fields are added).
- E. **AI** – Uses Quickmap and dBase IV if have lat.-lon. Quickmap maps.
- F. Consensus – looks like can exchange or pool release data.

V. Dr. Brian Morrissey, Assistant Deputy Minister for Agriculture Canada (research)

1. To gain support for biological control of weeds by the public and government sector we need to use new terminology.
2. Important to protect country from threats to crops /health/ environment.
3. Important to establish/maintain value vs. adding value especially in these days of restricted dollars.
4. Market failure in biocontrol (private company cannot market).
5. Decision is not whether we are needed – but how to raise money
6. Morrissey believes biocontrol is an essential core program – if outside funding dries up – government will have to fund.

VI. Montana budget

- A. \$10,300 – Knapweed – collections
- B. \$20,000 – Hound's tongue

- C. \$37,000 – Toadflax
- D. \$145,627 total – excluding spurge
- E. Spurge – \$200,000 (total consortium contribution)

VII. Weeds

A. Leafy Spurge

1. Peter has sent a list of his program priorities to Dieter to ask about costs. Once he receives a cost estimate he will notify the members of the consortium (the last group providing funds) for contributions. If he cannot cover the costs, the research will be cut down accordingly.
2. *A. lacertosa* – good establishment – clay soils – takes some shade.
3. *A. czwalinae* – good establishment.
4. Maybe 2 spp. under *A. lacertosa* – taxonomists finding genitalia anomalies – not exactly consistent with species.
5. *Pegomya curticornis* – *Pegomya* still a mess taxonomically – Griffith does not agree with Andre's identifications and current taxonomic literature – variable characters.
6. *Lobesia* – Peter not impressed with insect – BC and Alberta have established.
7. *Minoa* – Has done well in Saskatchewan and Alberta likes cooler/shaded sites and micro-habitats – if it goes over 30° C will die.
8. *Chamaesphecia crassicornis* – likes Canadian spurge – almost ready to go to TAG. Other *Chamaesphecia* spp. will have to develop better host acceptance.
9. *C. astatiformis* – approval for release – Peter will be mass-rearing in field cages.
10. *Spurgia capitigena* is released in Canada. Peter says this insect came from Montana and is from a mixed colony.

B. Knapweed

1. **Peter** – <1,000 m declining knapweed in Europe -no knapweed >800 in. So no insects for high altitudes. China – up to 15,000 m – squarous knapweed. Want to start screening agents in quarantine here.
2. **AI** – Still sorting out establishment and reasons for establishment.
3. **Jim** – Predation of *Urophora* – effect? *Urophora* has some impact, but predation of the seeds heads is having a toll. Picking up impact information via data (not observation).
4. **AI** – *Agapeta* – Grand Forks – working very well in valley bottoms.

5. **Al** – states that the combination of *Urophora*, *Agapeta*, and *Cyphocleonus* having a good impact. *Cyphocleonus* – can kill plants. Found 50 *Agapeta* on one root.
6. **Jim** – *Agapeta* – can kill if plants are stressed – will destroy food source.
7. **Jim** – *Chaetorillia* – in future – higher elevations – probable displacement from other spp.
8. **Al** – Future insects – what is happening here – determine first before going on to new biocontrol species.
9. **Bob** – May be some interest from APHIS for high elevation surveys in China (particularly interested in root insects).
10. **Al** – *Pelochrista* is difficult to obtain in Europe and thus establishment in North America has not occurred yet.

C. Toadflax

1. **Bob Nowierski** – trying to get approval for release of *Mecinus* and *Eteobalea* – has not submitted petitions to TAG.
2. **Neal** – 1980 – Research done at the Rome Lab showed *Eteobalea* to have a very narrow niche.
3. *Chrysolina* spp. on toadflax – Bob was going to work on? Charles Turner 1/2 screened. *What is the status?*
4. *Chrysolina gypsophilia* – talk to Bob about the status.
5. No *Brachypterolus* at Grand Forks (occurs on Dalmatian only in Kamloops).
6. **Bob** comparing impact of *Brachypterolus*, yellow, and Dalmatian toadflax. DNA comparison of *Brachypterolus* on Yellow vs. Dalmatian.

D. Scentless Chamomile, *Maticaria, perforata*

1. **Al** – *Coryssomerus* – suggested dropping species – not very specific – gall midge has been found.
2. **Neal**: 1990 – Minnesota, North Dakota, Nebraska and Missouri – northern states where scentless chamomile occurs. Montana – only 1 county responded as to it being a weed of concern.

E. Sulfur Cinquefoil

1. **Dieter** has identified 2 spp. – seed weevil and clear-wing moth.
2. Next step is test plant list.
3. BC hopes to come in – will do problem analysis on weeds in BC [i.e. distribution of native species of *Potentilla*, distribution and potential distribution of sulfur cinquefoil.

4. **Peter** – build in limits on test list – (i.e., if attacks strawberries and shrubby cinquefoils /natives drop).

F. Russian Knapweed

1. **Neal**: lots of interest in US – Bob Lavigne – insects from Turkey.
2. Nematodes – but other insects – Soviet and Europe.
3. River flood plain plant – (i.e., BC, NE Montana, Utah, and Wyoming).
4. Need a consortium – **Bob Lavigne** would be good person to be leader.

G. Common Tansy

1. **Alec** – survey in Alberta using CAESA-(federal and Alberta funding). He is conducting simulated herbivory studies with researchers at Univ. of Alberta to predict best herbivores for biocontrol.
2. Western Montana – along irrigation canals – interest in biocontrol, also interest in Idaho.
3. Will take a couple of years to start program.
4. BC has some heavy populations.
5. Plant is a problem in high elevation and moisture conditions.

H. Hawkweed

1. Areas where hawkweed is a problem includes Idaho, Montana (Kalispell area) and Canada Maritimes.

I. Field Bindweed

1. *Aceria malherbe* – still in greenhouse in Montana, probably will establish in Oregon (dry areas). (i.e., established in Texas).
2. The moth, *Tyta luctuosa*, has been released in Canada as well as Texas.

J. Hound's tongue

1. Hound's tongue – Rose will bargain to have the root feeding weevil, *Rabdorynchus varius*, dropped and part of U.S. budget cover additional screening of *Ceutorhynchus cruciger*.