

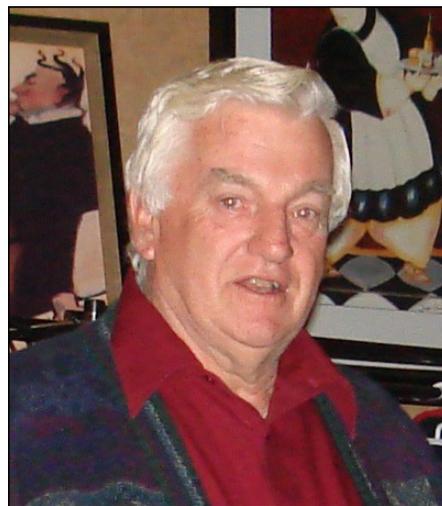


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### John Savage Re-Appointed Commission Chair

Commissioners were very pleased to receive the Provincial Government's announcement that John Savage has been re-appointed for a second three year term as Chair of the BC Cranberry Marketing Commission. Under John's leadership the Commission has developed several new programs and services for growers while strengthening its ties and support for the Association, the Cranberry Institute and the Cranberry Marketing Committee.



### Notice of 2008 Commission and Association AGM's

Date : Thursday February 21, 2007

Time : 10:30 AM

Place : Delta Town & Country

Agenda :

1. Minutes of the 2007 AGM
2. Reports
  - Chairman's Report
  - Board Report
  - North American Cranberry Industry Report
  - Development Plan Report
  - Canadian Consumer Education Report
3. Financial Statements
4. Election – 1 Member of the Commission
5. Other Business

Note 1: Lunch will be served at 12 noon

Note 2: The Annual General Meeting of the BC Cranberry Growers Association will begin at 1:00 PM

The BC Cranberry Marketing Commission & The BC Cranberry Grower's Association present:

### The 2nd Annual Cranberry Congress

*The annual educational day for BC cranberry growers*

Tuesday, February 5, 2008 ~ 9:30am to 5:00pm (lunch provided)  
 Delta Town & Country ~ 6005 Highway 17, Delta, BC

Don't miss the single most important educational day of the year for BC cranberry growers. Plan to attend the full day for your opportunity to learn from the "Who's Who" in cranberry extension work.

R.S.V.P. Jack Wessel at [cranberries@telus.net](mailto:cranberries@telus.net) or 604.302.1046



## 2nd Annual Cranberry Congress

*Congress Set for  
Feb. 5th, 2008  
at the  
Delta Town &  
Country Inn*

### **Message from Jeff Hamilton, Chair, BC Cranberry Congress Committee to All BC Cranberry Growers and Other Invited Guests**

On the cover of this issue of Cranberry Web is an invitation to attend our second annual "Cranberry Congress" scheduled for Tuesday, February 5<sup>th</sup>, 2008 at the Delta Town & Country Inn.

The Congress features noted North American cranberry industry experts who will share their knowledge and expertise with BC growers. The itinerary lists the presenters and the topics to be discussed and we believe your attendance at the Congress will be a day very well spent.

The Congress is jointly sponsored by the Commission and the Association. Partial funding is provided by the Investment Agriculture Foundation of BC.

We ask you to register for the Congress by January 31, 2008 as directed on the invitation. Registering in advance will help to ensure we have sufficient room and documents for everyone.

## 2008 Cranberry Congress Sessions

### **Nutritional Physiology of Cranberries and Cranberry Nutrition: How Do I Decide?**

Dr. Teryl Roper, University of Wisconsin-Madison

### **Development of Effective Management Strategies for Tipworm, Fireworm and Perennial Weeds**

Kim Patten, Washington State University

### **Cranberry Tipworm in BC Cranberry Beds**

Shannon Buckshaw, E.S. Cropconsult Ltd.

### **Cranberry Dieback Disorder**

Sheila Fitzpatrick, AAFC

Tom Forge, AAFC

Siva Sabaratnam, BCMAL

### **Sparganothis Fruitworm**

Sheila Fitzpatrick, AAFC

### **New Cranberry Harvesting Technology**

Grower Panel

### **Drainage on Cranberry Farms: What are Growers Doing?**

Grower Panel

**PLUS, meet and greet with the speakers at 4:00pm!**



Finding the cause (or causes) of Cranberry Dieback Disorder (CDD) was identified as a priority by the BC Cranberry Research Committee. A project to conduct the research leading to discovering the causal agents and then to develop some effective management strategies, was funded by the industry and the Investment Agriculture Foundation. The work was undertaken by Dr Sheila Fitzpatrick, Dr Tom Forge and Dr Siva Sabaratnam. The following is a brief summary of the findings of the work done in 2007.

This is the first comprehensive investigation of “Cranberry Dieback Disorder”, which is the common name given to symptoms of cranberry vine decline recently observed by cranberry growers in British Columbia. A total of 37 growers representing 41 cranberry farms were contacted and interviewed about symptoms of vine dieback on their farms. Vine decline and death that was clearly associated with Dearness scale infestations, or cranberry girdler feeding damage, or poor drainage, or herbicide damage was not considered to be Cranberry Dieback Disorder (abbreviated CDD). Symptoms of CDD begin in spring when uprights lose their lower leaves, remaining leaves take on a copper or burgundy colour, and upright stems become grey and dead looking. Later in summer, areas affected with CDD show as small or large blackened areas in the cranberry bed. Beneath the uprights, affected runners have blackened areas or cankers at rooting or branch points. Affected vines may be well rooted or poorly rooted. CDD does not kill all growing points on a vine, and vines can re-root and recover if affected areas are sanded or top-dressed with another substrate.

The major pathogenic fungal genera recovered from symptomatic runner tissue were *Allantophomopsis* (causal agent of Black Rot, a post-harvest fruit rot), *Coleophoma* (casual agent of Ripe Rot, a post-harvest fruit rot), *Colletotrichum* (causal agent of Bitter Rot, a post-harvest fruit rot), *Pestalotia* (potential causal agent of post-harvest fruit rot), *Phyllosticta* (causal agent of Early Rot, a pre- and post-harvest fruit rot and blighting of flowers, leaves and stems), *Fusarium* and *Rhizoctonia*. Although the detection of fruit rotting fungi in cranberry beds highlights the significance of their presence in BC cranberry fields and importance of managing such pathogens in cranberry beds to minimize pre- and post-harvest fruit rot, their association with or role in CDD may not be significant. Several Oomycetes (fungi-like organisms, commonly referred to as water moulds or “protists”, e.g. *Phytophthora* and *Pythium*) were also isolated from the runners and roots and will be identified based on their morphology and molecular characteristics. Runners with brown pith were consistently infected with the fungus *Cryptosporiopsis actinidiae*, which causes rot or canker disease on other plant species. It is possible that *C. actinidiae* may play a significant role in Cranberry Dieback Disorder Complex. A basidiomycete fungus was isolated from blackened areas on runners. Blueberry Scorch Virus was detected in samples from four sites, and Blueberry Shock Virus was detected at one site. These viruses are not known to produce symptoms or damage to cranberry.

“...first comprehensive investigation...”

“...affected runners have blackened areas or cankers at rooting or branch points.”



“Runners with brown pith were consistently infected with the fungus”



## Research Report - Cranberry Dieback Disorder (continued)

Analyses were conducted on 40 beds.



“... cranberry girdler ruled out as a contributing factor in CDD.”

*Phytophthora cinnamomi*, which causes root and runner rot in other cranberry growing areas, may or may not be implicated in CDD in BC. DNA consistent with *P. cinnamomi* DNA was isolated from several symptomatic and asymptomatic farms, most of them in Pitt Meadows. Results imply low levels of the pathogen in the soil. However, *P. cinnamomi* has not been cultured from symptomatic roots, runners, or surrounding soil, therefore it is premature to make a conclusive statement about whether or not *P. cinnamomi* is a causal agent of CDD in BC.

Nematode analyses were conducted on samples from each of 40 beds, including several non-symptomatic beds. The plant-parasitic nematodes *Helicotylenchus* spp. (spiral nematodes) and *Mesocriconema* spp. (ring nematodes) were found in 39 and 30 percent of symptomatic beds, respectively. While cranberry is known to be a good host for these nematodes, little is known of their pathogenicity. *Hemicylophora* spp. (sheath nematodes), which are known to be pathogenic and widely distributed in east coast beds, were found in only 13 percent of the BC bogs. Of particular interest, *Paratrichodorus* spp. (stubby-root nematodes), which are known to be pathogenic to cranberry, were found in 47 percent of the symptomatic beds. Ten beds had no plant-parasitic nematodes, 11 beds had one species, 11 beds had two species, 6 beds had three species, and 2 beds had 4 species. The average number of nematode species per bed varied across growing areas, with Richmond beds averaging 2.2 species per bed, Pitt Meadows averaging 0.8 species per bed, and Delta averaging 0.7 species per bed.

*Paratrichodorus* spp. and *Hemicylophora* spp. appear to be the nematodes most likely to be causing damage in BC cranberry beds. Both of these groups of nematodes are ectoparasites. They preferentially feed on root tips and undifferentiated elongating cells near root tips, thereby disrupting root elongation, causing ‘stubby’ roots or witches-broom symptoms, and reducing overall root growth without necessarily causing noticeable lesions or necrotic areas.

These nematodes were not found in a few beds with extreme CDD symptoms, however, and nematodes do not appear to be the primary cause of the dieback disorder in BC (if there is a single cause). These nematodes are nonetheless likely to be having negative effects on cranberry health and productivity, but the extent of their effects is unclear.

In summary, the considerable amount of observation, sampling and analysis revealed several plant pathogens and plant-parasitic nematodes previously unrecorded from BC cranberry farms, and ruled out cranberry girdler as a contributing factor in CDD. No pathogen, nematode, or complex of pathogens or nematodes was consistently associated with symptoms of CDD. Future research will help determine which of the most likely pathogens and nematodes are implicated.



## Agency Designation Applications

Two firms have signaled to the Commission they intend to apply for Agency designation this winter. Under the Act and the Commission's General Orders, an Agency is permitted to receive fruit directly from a licensed grower. There are currently two designated agencies in BC, Ocean Spray of Canada and Lucerne Foods.

When an agency designation application is received, the Commission must go through a legislated process prior to arriving at a decision. The process includes advising all interested parties (all Growers and Producer Vendors and others) and a public hearing where interested parties may present their views.

*Two Agency  
Applications  
May Be Considered*

## Crop Data

Preliminary data has been received for the 2007 BC cranberry crop. Total delivered crop will be between 79 and 80 million pounds which tops the 77 1/2 million pounds of 2006 but is short of the 2004 85 million pound crop.

Year	Production (in millions of pounds)
2007	79,500,000
2006	77,500,000
2005	73,892,000
2004	85,269,900
2003	83,238,000

*Preliminary 2007  
BC Cranberry Crop  
Data*



# Cranberry Butter Lettuce Salad

*Superb  
Salad Recipe!*

## Commission Directors

John Savage  
Chair

Jeff Hamilton  
Vice Chair

Allen May

Todd May

## Special Advisor

Jack Brown

## BC Cranberry Marketing Commission

71 – 4001 Old Clayburn Rd.  
Abbotsford, BC  
V3G 1C5

Phone 604 302-1046

Email [cranberries@telus.net](mailto:cranberries@telus.net)

Cranberry Web newsletter  
design & lay-out by  
Sharon Dean & Associates  
e-mail [sharon@sharon-dean.com](mailto:sharon@sharon-dean.com)

**(Serves 6)**

### Dressing

1 cup cranberries, fresh or frozen  
1 Tbsp. sugar  
3 Tbsp. mayonnaise  
2 Tbsp. cranberry vinegar or white wine vinegar  
½ cup extra virgin olive oil  
4 oz. soft goat cheese, crumbled  
salt and pepper

Place cranberries and sugar in a processor and pulse a few times to chop the berries. In a medium bowl, whisk the mayonnaise and vinegar together. Gradually whisk in the oil, then the cheese and cranberries. Season to taste with salt and pepper. (Note the dressing will be quite thick, thin with more white wine vinegar if desired.)

### Salad

4 slices bacon, diced  
1 large butter lettuce  
½ cup dried cranberries  
½ cup candied walnuts (recipe follows)

Sauté bacon in heavy skillet over med-high heat until crisp. Transfer to a paper towel lined plate to cool.

Tear the lettuce into large pieces into the salad bowl. Add the bacon, dried cranberries and the walnuts. Toss the salad with enough dressing to coat. Serve, passing the rest of the dressing.

### Candied Walnuts

½ cup walnut halves  
1 Tbsp. maple syrup  
½ Tbsp. sugar  
½ tsp. salt  
¼ tsp. pepper

Preheat oven to 325°. Oil baking sheet. Combine walnuts and remaining ingredients in a bowl and toss to coat. Spread the mixture on the sheet, separating the nuts. Bake until the nuts are golden, stirring occasionally, about 12 minutes. Watch carefully to ensure they don't burn. Transfer the nuts to a sheet of parchment paper to cool, separating any that stick together.

