



The BLUEBERRY BULLETIN

A Weekly Update to Growers

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July 19, 2010

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AT A GLANCE.....Insect and disease problems that should be considered this week.

PEST/DISEASE	WEEK OF July 19	WEEK OF July 26
GROWTH STAGE	HARVEST	HARVEST
Blueberry Maggot See list in previous newsletter	Monitor traps 2X/week. Treat if needed.	Monitor traps 2X/week. Treat if needed.
Aphids Imidacloprid (Provado etc.), Assail, Actara, or Lannate for suppression of low populations	Monitor and treat if over 10% of terminals infested.	Monitor and treat if needed.
Scales	Monitor crawlers. Use wrapping of black electricians' tape covered by double-sided sticky tape around canes. Use a hand lens to see crawlers on the sticky tape.	If crawlers are present, then treat with Esteem or Diazinon.
Oriental Beetle Imidacloprid (AdmirePro and generics)	Continue monitoring, and treat if needed.	Continue monitoring, and treat if needed.

CULTURE:

Dr. Gary C. Pavlis, Ph.D
County Agricultural Agent



Leaf Tissue Analysis: Readers of this newsletter are aware that fertilizer recommendations for blueberries are based on leaf analysis. We have found that there is no correlation between the soil analysis and the amount of nutrients that actually enter the blueberry plant. Soil analysis is useful to determine pH, and maintain pH in the proper range, 4.5 - 4.8. Thus leaf analysis is critical to maintain the blueberry plant in a healthy, efficient, productive condition. Now is the time to take leaf samples for analysis.

Leaf tissue analysis is a way of determining the actual nutritional status of plants. It is an excellent and inexpensive way of finding out if your fertilization program is working or if changes need to be made. The analysis provides information on foliar N, P, K, Ca, Mg, Mn, Fe, Cu, B and Zn levels for the leaves sampled, a fact sheet on what the levels should be for these plant nutrients, and recommendations for corrective measures if needed. Leaf tissue analysis can help pinpoint the source of problems and determine what measures may be needed to ensure proper nutrition of the crop. Interpretation of leaf tissue analysis is most accurate when the soil pH is within the proper range for blueberries, 4.5 - 4.8.

When to Sample: Sample healthy leaves during late July or early August.

How to Sample: Collect 30-50 leaves per sample. Leaves should be from the middle shoot, not old ones/not new ones. Sample different varieties separately, if possible. Collect leaves from as many bushes as possible in the sample area. Gently wash the leaves in tap water to rinse off soil or spray residue. Allow the leaves to air dry until they are brittle before placing into a paper bag.

The following laboratories can be considered:

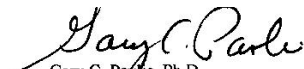
Agri-check Inc.
P.O. Box 1350
Umatilla, OR 97882-1350
Call Lab Manager at 541-922-4894 for
Plant Analysis Fee Schedule

Midwest Laboratories Inc
13611 B Street
Omaha, NE 68144
Phone # 402-334-7770 or go on the internet at
www.midwestlabs.com

A & L Eastern Agricultural Labs, Inc.
7621 Whitepine Rd.
Richmond, VA 23237
(804) 743-9401

Agricultural Analytical Services Lab
The Pennsylvania State University
University Park, PA 16802
Phone # 814-863-0841

Sincerely,


Gary C. Parks, Ph.D.
Atlantic County Agricultural Agent

Editor – Blueberry Bulletin slp



INSECTS:

*Dr. Cesar Rodriguez-Saona, Extension Specialist in
Blueberry Entomology, Rutgers University
Mr. Dean Polk, IPM Agent – Fruit
Mr. Gene Rizio, IPM Program Associate – Fruit*

Blueberry Leafminer (BBLM) (and some other ‘worms’): About 27% of beating tray and shoot samples have been positive for leafrollers and other worm/larvae. This is an increase since last report and is mostly a result of greater numbers of BBLM tents seen in the field along with a lesser level of other worms seen in leaf shelters. In two cases other leafroller species were feeding on the fruit at very low levels. A few sites are starting to show an increase in fresh tepee tents with live BBLM larvae inside. Although this insect is not a fruit feeder, some growers have expressed concerns about them getting into the pack, especially when machine picking. Casual observations have not shown Assail to have any effect when applied for other insects.

Aphids: We see a slight increase in aphid levels this week with 35% of shoot samples being positive and 8% exceeding the 10% infestation level. This is partially due to the fact that samples of Elliott comprise a higher percent of our samples at this time of year, and Elliott remains greener, longer, and has more aphids than other varieties at this time of year.

Putnam Scale: Scale crawler traps are not yet showing any movement but we expect this to occur sometime over the next 2 weeks at which time growers will have an opportunity to treat the second generation.

Anthracnose: About 23% of field fruit samples have been positive for infection in Bluecrop and 16% positive in Elliot. The highest levels were in Bluecrop, with about 1.5% of clusters infected with some amount of disease.

Stem Blight: Dieback is present in several locations. Growers should not delay in cutting these canes out as close to the crown as possible and disposing of the wood. Even cut

canes left on the ground, can sporulate and contribute to additional infections. Therefore, leaving infected tissue in the field chopped or otherwise is not recommended.

monitoring. IPM program personnel are now doing this for participating growers who wish to have samples taken. If you wish to have this done as part of the IPM program, please contact the Atlantic County office, or Gene Rizio as soon as possible.

Leaf Tissue Samples: Now is the time to collect leaf tissue samples for fertility

BLUEBERRY TRAP COUNTS – ATLANTIC COUNTY

Week Ending	CBFW	RBLR	OBLR	SNLH	Or. Beetle	BBM
4/3		112.8				
4/10		151.9				
4/24		109.4				
5/1	0.01	47.1				
5/8	1.2	31.0				
5/15	2.7	1.0	0.0			
5/22	1.2	0.1	9.7			
5/29	0.2	0.2	27.7		0.00	
6/5	0.5	27.8	22.3	0.0	25.0	0.0
6/12	0.5	50.0	19.9	0.1	167.9	0.23
6/19	0.2	44.0	3.5	0.1	540.8	0.19
6/26	0.0	94.0	3.0	0.2	887.1	0.52
7/3	0.0	77.0	1.6	0.1	876.0	0.88
7/10	0.0	67.6	1.3	0.2	277.2	1.98
7/17	0.0	48.8	1.7	0.2	82.4	1.00

BLUEBERRY TRAP COUNTS – BURLINGTON COUNTY

Week Ending	CBFW	RBLR	OBLR	SNLH	Or. Beetle	BBM
4/3		33.5				
4/10		74.3				
4/24		35.5				
5/1	0.00	22.6				
5/8	.17	13.9				
5/15	1.8	0.75	2.5			
5/22	4.4	0.1	5.7			
5/29	0.7	0.2	28.9		5.2	
6/5	1.4	1.8	30.5	0.0	9.9	0.0
6/12	2.5	19.7	44.2	0.1	155.8	0.43
6/19	2.5	33.3	9.3	0.3	341.8	1.20
6/26	1.8	17.5	3.2	1.2	887.9	1.60
7/3	1.2	26.1	3.1	0.7	969.3	2.52
7/10	0.5	3.7	0.7	0.2	248.0	2.41
7/17	0.1	6.4	0.4	0.2	159.4	0.83

Blueberries may protect muscles from exercise damage

By Stephen Daniells, 02-Apr-2010

Related topics: Antioxidants, carotenoids, Phytochemicals, plant extracts, Energy & endurance

Antioxidant-rich extracts of blueberries may counter the detrimental effect of excessive exercise, according to new results from a new study from New Zealand.

Damage to muscle cells exposed to oxidative stress was significantly reduced when also exposed to doses of blueberry fruit extracts, according to findings published in *Molecular Nutrition & Food Research*.

"In our study blueberry fruits were suggested as good candidates to combat muscle oxidative damage although further investigations especially at an in vivo level are needed," wrote the researchers, led by Dr Roger Hurst from New Zealand Institute for Plant and Food Research.

Blueberries, nature's only 'blue' food, are a rich source of polyphenols, potent antioxidants that include phenolics acids, tannins, flavonols and anthocyanins.

The berries are said to have a number of positive health effects, including cholesterol reduction, and prevention against some cancers and neurodegenerative diseases such as Alzheimer's.

The popularity of the berry has increased in recent years with the publication of more science supporting its health benefits, and an overall consumer move towards 'superfruits' and all things 'antioxidant'.

Potential with perspective

While the new study supports a potential role for improved muscle health, the researchers note the limitations of their *in vitro* approach, particularly in relation to how this translates to effects *in vivo*.

"Much further research using human intervention studies is warranted to fully understand the implication of the findings reported here with our in vitro evaluations," wrote the researchers. *"Bioavailability concerns also make it difficult to evaluate if the doses used in this and many other published in vitro studies are appropriate."*

Study details

Dr Hurst and his co-workers used developing skeletal muscle fibres, also known as myotubes, and exposed them to various concentrations of fruit extracts, as well as a calcium compound known to induce stress as occurs in exercising muscle (calcium ionophore), or a compound known to induce oxidative stress (hydrogen peroxide).

Results showed that the blueberry extract protected the muscle fibres in a dose-dependent manner.

Further analysis of the extract indicated that the active compounds could be malvidin galactoside and malvidin glucoside, said the researchers.

"These in vitro data support the concept that blueberry fruits or derived foods rich in malvidin glycosides may be beneficial in alleviating muscle damage caused by oxidative stress," wrote Dr Hurst and his co-workers.

From Petri dish to marathon runner

"Although it is difficult to deduce the biological significance of the data presented here from in vitro studies, one may speculate that consumption of blueberry fruit polyphenolics and particularly malvidin glycosides may be beneficial in alleviating the damaging consequences of oxidative stress in muscle tissue," wrote Dr Hurst and his co-workers.

"Our data further endorse that more research in the action of blueberry fruit polyphenolics and muscle function is warranted. Detailed research, especially utilizing human intervention trials may provide the robust evidence required to support the use of blueberry fruit polyphenolics in functional foods and/or sports supplements," they concluded.

Plant & Food Research's Dr Roger Hellens, Genomics Science Group Leader, will be presenting at the upcoming NutraIngredients Antioxidants 2010 Conference in Brussels on the subject of super Vegetables. For more information and to register, please click here .

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If you have any comments about this newsletter, please make them in the space below and mail to:

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I would like to see an article on the following subjects: _____

I would like to comment on the following articles: _____

Title: _____ Date: _____

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