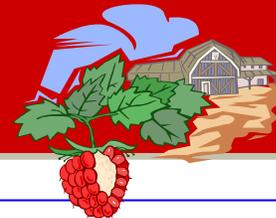


UTAH BERRY GROWERS ASSOCIATION NEWSLETTER

October 2006
Volume 1, Issue 1



Welcome to the inaugural edition of the Utah Berry Growers Association Newsletter

In February of this year, USU Cooperative Extension held a winter educational meeting on raspberry production in Laketown and announced the meeting to the limited contact list that we had at that time. Several in attendance at that meeting suggested that a growers association be organized. Later, a committee was formed with commercial growers and Cooperative Extension representatives from Cache, Box Elder, Rich, and Utah counties. This committee met in April to organize the Utah Berry Growers Association, and identified the following objectives for the organization:

- Advise Extension on berry grower concerns
- Protect the name and integrity of Utah grown berries and address potential branding opportunities
- Raise public awareness of Utah's berry industry
- Provide opportunities for networking and coordinated marketing
- Explore avenues for value-added product
- Educate growers on management issues including pest control and new varieties

The committee also planned a summer farm tour that was held at Weeks Berry Farm, in July (see article on page 2). At present, there are no dues or membership fees required to participate in the organization. The next meeting of the Utah Berry Growers Association will be Tuesday, February 6th from 1:00 p.m. to 5:00 p.m. at the Box Elder County Extension Office in Brigham City. We hope the information in this newsletter is of value to you, and that you will choose to join us in Brigham City next February.

UBGA Representatives

Secretary: Loralie Cox, Cache County Extension

Executive Board:

Merv Weeks, Weeks Berry Farm, Cache County
Craig Floyd, Chad's Berry Patch, Rich County
Thayne Tagge, Box Elder County
Wayne McBride, IFA, Utah County
Brent Black, State Extension Fruit Specialist
Darrell Rothlisberger, Rich County Extension

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 United States Department of Agriculture
National Agricultural Statistics Service

UTAH FRUIT INDUSTRY SURVEY

The Utah office of the National Agricultural Statistics Service, in conjunction with the Utah Department of Agriculture and Food, and USU Cooperative Extension, is conducting a survey of Utah's fruit industry. NASS has conducted similar surveys in the past, but these have been limited to the tree fruit industry. The 2006 survey will be the first to include berry crops. Survey forms will be mailed in mid September. Please complete your survey form and return it as soon as possible. Survey results are used by University, State and Federal administrators in determining the needs of the industry. If you do not receive a form and would like to participate, please contact Rick Kestle, Director, USDA, National Agricultural Statistics Service, Utah Field Office. 800-747-8522.



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We hope you find the information in this newsletter useful. If you have comments regarding information in this newsletter, or would like to see in future newsletters, please contact Loralie Cox at loraliec@ext.usu.edu, or (435) 752-6263
Brent Black, Extension Fruit Specialist
435-797-2174 E-mail: blackb@ext.usu.edu

UTAH BERRY GROWERS ASSOCIATION SUMMER TOUR 2006

Weeks Berries of Paradise was the location for the first annual tour of the Utah Berry Growers Association on the evening of July 19. Merv's farm is located on a picturesque bench location overlooking the southern end of Cache Valley. About 25 people from northern Utah were in attendance to hear the history, successes and challenges that Merv and his sons deal with in their operation.

After an initial introduction by USU Extension Fruit Specialist, Brent Black, Merv told the group how years ago he began growing raspberries, fruit trees and grapes. Today, with the help of his sons, he still grows a number of different varieties of raspberries, as well as blackberries, currants and has recently planted blueberries.



Before the group moved out to look at his nearest fields, Merv's son brought a mechanical harvester around for the group to examine. Those in attendance were curious about the machine and its efficiency harvesting small fruit. After answering a number of questions, the group moved to a nearby raspberry field. Varieties, trellising systems and disease problems were discussed. Kent Evans, USU Extension plant pathologist, discussed symptoms and control options for typical virus problems in raspberries.



On the way to the field of blueberries, the group examined several rows of strawberries and discussed associated problems. Merv's two year old blueberry patch was of particular interest. He has spent considerable time preparing and acidifying planting beds and the irrigation water as well. Merv has a problem with birds and rodent damage in his blueberry patch and has implemented a distressed bird call to keep them from the field. Adjacent to the blueberries are rows and rows of currants. Merv explained how the currants are harvested, pruned and marketed. Diane Alston, USU Extension Entomologist, talked about a couple of insect pests generally associated with raspberry and currant plantings.

After touring his fields, the group returned to the building he uses to sort, wash and bottle berry products. He recently incorporated a visitor's gift shop with an assortment of juice and jam made from the various berries grown on the farm. Each participant was treated to black currant juice and some raspberry cheese cake before the tour adjourned.

Please join us for the next meeting of the Utah Berry Growers Association on Tuesday, February 6th from 1:00 p.m. to 5:00 p.m. at the Box Elder County Extension Office in Brigham City, 195 W. 1100 S., 2nd Floor.

WHAT'S EATING YOUR RASPBERRIES BESIDES YOU?

Diane Alston, Utah State University Extension Entomologist

If you've noticed dieback or wilting tips of raspberry canes, insects may be infesting your raspberry bed. There are three main insects that attack raspberry canes in Utah. Currently, the most prevalent insect infesting raspberries in northern Utah is the raspberry horntail. The raspberry horntail is a wood-boring wasp. It will attack raspberry, blackberry, other related brambles, and roses. Injury is usually confined to first-year, vegetative canes. Horntail larvae (immature stage) are white, cylindrical with dark brown heads and a pointy tail with a spine. In northern Utah, wilting cane tips become noticeable in June and July as larvae bore through the center pith, which becomes soft. It's easy to verify the insect's presence by cutting open wilted canes to check for larvae inside.



Prune and destroy infested canes when wilting becomes apparent;

this will remove the larvae and reduce the population. A parasitic wasp attacks horntail larvae, and helps reduce populations, but not before some injury has occurred. The smaller parasitic larvae can be seen crawling on horntail larvae. To control horntail eggs and young larvae in the spring, treat canes with a full cover spray of insecticide when new growth begins. Carbaryl (Sevin), diazinon, malathion and rotenone are effective insecticides. A repeat application can be made 7-14 days later if populations are high. Do not treat with insecticides just before or during bloom to avoid harming pollinators.



Two other insects that attack raspberry canes are the rose stem girdler, a flat-headed beetle, and the raspberry crown borer, a clear-winged moth. Stem girdler larvae form two to five spiral

grooves in the cambium (just under the bark), girdling the canes and causing wilt and death. First year canes are attacked more than fruiting canes. Girdling in first year canes produces a gall-like swelling. Larvae are white, slightly flattened and have two short, brown, toothed projections on the tail end.



Raspberry crown borers have a two-year life cycle. The first indication of injury is wilting and dying of foliage on first-year canes in April through June. Infested cane tips may curl into a shepherd's crook. Damaged canes become spindly, may break at ground level, and may be predisposed to winter injury. Larvae over winter in the crown and tunnel upward the second year. Adult moths emerge in summer to fall, leaving pupal skins attached to emergence holes in canes.

Pruning is helpful to reduce infestations of all three raspberry insects. Prune canes below the insect and destroy (burn, bury at least 2 inches deep, or dispose in landfill). Remove entire cane if infested with crown borer. If infestation is substantial, pruning should be supplemented with chemical control. The insecticides listed above are effective for all species. Timing for cane girdler is the same as for the horntail. For the crown borer, first-year larvae can be killed in the fall (mid-October) as they crawl down canes to overwinter in crowns or the following spring when they become active (April to May). Apply a full cane spray and drench to the base of plants allowing the insecticide to soak into the root zone. Treatments must be applied for at least two or more consecutive years for successful control of crown borer.

Additional resources:

USU Integrated Pest Management website at <http://extension.usu.edu/cooperative/ipd/>
The USU raspberry production guide: <http://www.hort.usu.edu/pdf/fruit/raspberry.pdf>

BRAMBLE DISEASE MANAGEMENT- AN OUNCE OF PREVENTION IS WORTH A POUND OF CURE!

Cathy Heidenreich, Small Fruit Extension Support Specialist, Department of Horticulture, Cornell University's College of Agriculture and Life Sciences, Ithaca, NY

Slight modifications made by C. Kent Evans, USU Extension Plant Pathologist, Biology Department, 5305 Old Main Hill, Logan, UT 84322-5305. Phone 435-797-2504. ckevans@cc.usu.edu

What does it take to consistently produce high quality bramble fruit? Some would say sheer luck; others might cite things like favorable weather, excellent soil, the "proper" cultivars, a good fertilizer program, ample irrigation, excellent pest management, etc. And, in fact, all of these things in concert determine final fruit quality.

That said, let's consider in particular disease management and the direct and indirect impact it has on fruit quality. Gray mold is a perennial problem in bramble fruit production, and is the number one cause of loss of fruit quality and yield. Cane diseases and root rots (spur and cane blights, *Phytophthora* root rot, *Verticillium* wilt) weaken brambles over time to such a degree yields are reduced or in some instances, lost. They may also make brambles more susceptible to winter injury and subsequent death. Other bramble pathogens such as powdery mildews, rusts and anthracnose may infect multiple plant parts including leaves, canes, flower buds, and fruit. Virus diseases such as Raspberry Mosaic Virus Complex or Crumbly Berry may reduce plant vigor and productivity and/or fruit quality.

What's the secret, then, to good bramble disease management? It's quite simple: Bramble disease management needs to be proactive to be successful! While the concept itself is simple to understand, the implementation of it involves serious forethought and energy. Successful bramble disease management requires a short-term commitment to get it started in your operation, and a longterm commitment to sustain it as part of your every day operation. Let's take a look at the steps involved in setting up a proactive bramble disease management program. We will start at ground zero with a new planting and then work through disease control strategies for established plantings. We will finish up with a bramble disease management checklist by way of review. Ready? Set? Go!

Before You Grow

Whether you are a first time grower or have been in the business for an extended period, there are some basic things to consider in terms of disease management before you put in a new planting. There are 4 key items that you need to identify before you begin: your plant host, potential diseases, environmental conditions favoring their build up, and potential control strategies.

Know your hosts

There is, for the most part, some degree of host susceptibility/resistance to each of the bramble diseases previously discussed. That means the cultivar you select may determine in part what disease problems you face. Do your homework and determine to which diseases your host is most susceptible. Does the dollar return on sales substantiate the investment needed for disease control on a particularly susceptible variety? If not, consider selecting an alternate variety of comparable quality with greater host resistance. Does the planting site or some portion of it favor development of a particular disease? If so, be sure to put your most resistant varieties in that area and locate more susceptible varieties on more favorable sites. A word of warning, in the case of root rot diseases, even the most resistant cultivars may fail under favorable environmental conditions and high disease pressure.

Identify potential diseases

Now that you have researched your hosts and know their relative susceptibilities to various diseases, you need to explore what diseases may pose a threat in your area. What bramble diseases are most common in your geographic region? Your locality? Are there other operations in the vicinity? What disease issues do they have?

Determine Environmental Conditions Favoring Disease Development

Take a good look at your planting site. Then look again. And again...Is there an air or water drainage issue that cannot be redressed? Is it located next to hedge rows or abandoned fields with high populations of wild brambles? Is it in a frost pocket that may result in cane injury? Perhaps it's an exposed site with a lot of strong winds. Or a site next to a hedgerow which is shaded a good part of the day. What were the crops previously grown on that site? Crop history in solanaceous plants such as potatoes, tomatoes, peppers etc. may have facilitated population buildup of *Verticillium*, which may persist in soil over periods of 10 years or longer. Even solanaceous weeds, such as nightshade serve as hosts for *Verticillium*. One or more of these factors may favor disease development in your new planting.

What time of year are diseases most likely to occur? How often do they occur during the season? What

conditions favor their build up? Are they weather related? Related to host growth stage? At what point do you need to take action? Are there established action thresholds?

Explore short-term and long-term control options
 What are your options to help prevent an outbreak? They are three-fold: cultural, biological, and chemical.

Cultural methods - Exclude, Inhibit or Limit, and Eradicate! Starting with disease free plants is important for all diseases, but particularly important for orange rust and viruses. Always check to see if disease resistant cultivars are available and use them if feasible. Select sites, soils and planting designs carefully to maximize air and water drainage. Maintain plant health by properly managing soil nutrition and irrigation, and minimizing plant wounding. Use physical barriers such as distance, mulches, row covers etc. Remove and destroy debris from pruning and harvesting operations immediately. Harvest ripe fruit promptly. And finally, remove infected plants as soon as they are identified; this is especially important in the case of orange rust or viruses.

Biological methods – Perhaps you have heard the saying “Little bugs have little bugs to bite ‘em, lesser bugs have lesser bugs, and ad infinitum!” More and more biological control organisms are now being produced on a commercial basis and may be available for use in disease suppression or prevention. For example, there is now a benign strain of the crown gall bacterium (K84) that maybe applied to bramble cuttings to help prevent infection by more virulent strains. Other pathogen predators, parasites or competitors may have been identified and made available commercially to help in the fight against bramble diseases.

Chemical methods - What disease control products, if any, are available to you as a commercial grower, as an

organic grower? Check out these websites for more information: Products labeled for use in

When You Suspect a Disease

Like death and taxes, disease problems are inevitable. The steps above can often help delay or minimize the occurrence of diseases, but will not completely eliminate them. So, what to do if you suspect a disease? Now's the time to get out your hand lens and do a little detective work!

Sleuth out the Suspects

There are three prerequisites to disease detection- a keen eye, frequent observation, and good notes! It's good to get out in the field early in the season and keep good notes about your plants' health. Use notes on healthy growth and development as a “baseline EKG” to evaluate how plants are doing during the course of the current season or between seasons. This makes it easier to spot occurrences of an unusual nature: one section of field that is behind in growth compared to another, brown flecking on leaves, wilting, spots on canes, yellowing of green tissue, dead canes, swellings, stunted plants, etc. Be sure to bring along the tools of the trade and do some CSI investigating of your own. These tools might include a field pack with the following: hand-lens, sample bags, trowel, pocket knife, pruner, permanent marker, note book, pencils or pens, and a map of each field to be scouted, pocket ID guides. Record disease information on the maps during scouting; use maps to calculate areas for control measures, if needed. Look for anything out of the ordinary. Record the specific plant part affected, and how it differs from a healthy plant (symptoms). Note the presence or absence of a pathogen (signs). Are there patterns of distribution on the plant, in the row, in the field? Does the appearance of damage (symptoms) correlate with a specific event: weather, crop production procedure, chemical application, other...)?

Table 1. Bramble Development and Associated Diseases

| <u>Summer-Fruiting Raspberries/Blackberries</u> | <u>Primocane-Fruiting Raspberries</u> |
|--|--|
| <ul style="list-style-type: none"> • <i>Bud break</i> <ul style="list-style-type: none"> o Anthracnose o Spur blight (red raspberries) o Cane blight • <i>Early bloom</i> <ul style="list-style-type: none"> o Gray mold o Powdery mildew • <i>Full bloom</i> <ul style="list-style-type: none"> o Gray mold o Powdery mildew | <ul style="list-style-type: none"> • <i>From petal fall through the beginning of harvest</i> <ul style="list-style-type: none"> o Gray mold <p><u>Special Pests</u></p> <ul style="list-style-type: none"> • Raspberry leaf spot • Orange rust • Verticillium wilt • Phytophthora root rot • Crumbly berry • Mosaic virus complex |

Confirm Your Diagnosis

Have good diagnostic resources and/or references at your disposal on the farm or online to help in making your initial diagnosis. A list of suggested bramble resources is provided for you in the bibliography following this article. Remember, not all disease is caused by a living organism such as a fungus, bacterium, virus, etc. Abiotic diseases often occur and may have symptoms similar to those caused by pathogens. Here is a short review of probable causes of abiotic disease:

- *Nutrient extremes*
 - deficiencies, toxicities
- *Temperature extremes*
 - winter/frost injury, ultraviolet radiation/heat
- *Moisture extremes*
 - drought, flooding, relative humidity
- *Phytotoxicity*
 - adverse reactions to chemicals
- *Environmental damage*
 - wind, hail, lightning strikes
 - air pollution, acid rain, wildlife
 - mechanical injuries and wounds

Consult your local cooperative extension office or regional specialist if you are unable to identify the disease with resources at hand. Or alternatively, send a sample to a diagnostic lab for further testing or confirmation.

Apply Control Strategies

Carefully follow all label instructions when applying control products. (Note: Both the crop **and** pest must appear on the NY label!) Always apply products or biologicals at the label recommended rates. Use sufficient volume and pressure to get thorough coverage of plant material. Maintain and calibrate application equipment on a regular basis. Store any remaining product according to manufacturer instructions. A word to the wise on fungicide resistance development; because brambles are a relatively small market share for fungicide companies, fewer numbers of products are available for use on these crops as compared to other major fruit crops, such as apples or stone fruit. To maximize the efficacy and minimize fungicide resistance development for the limited products available, it is wise to alternate chemistries. See product label instructions for more specific information on managing fungicide resistance.

Once Disease Control Strategies are in Place

Continue to monitor disease-related information after control measures are in use. Was the control measure effective? Has the occurrence or frequency of the disease been reduce to acceptable levels? Is there a need for future concern? Keep records to help determine the effectiveness of your control strategies, and provide information for next year's disease scouting forays. Adjust strategies as needed until acceptable levels of control are achieved.

In Summary

The process described above may seem rather time consuming and involved at first, but will pay big dividends in return for your investment. Once you have implemented it fully, it takes only a small amount of time each week to keep

it running smoothly. And by the way, many of the general pest management principals listed above may also be used for insects, weeds, and wildlife! How's that for killing several birds with one stone (no pun intended...well, maybe!) Remember that checklist I promised earlier? Here it is!

Disease Control Strategies- Preplant

- Preplant cover crops for suppression of weeds and soil-borne diseases.
- Resistant cultivars.
- Certified, disease-free planting stock.
- Do not establish new plantings next to wild brambles.
- Select sites with good soil and air drainage.
- Orient crop rows with prevailing breezes.
- Space plants properly.

Disease Control Strategies- Established Plantings

- Maintain overall plant health.
- Thin to proper cane density.
- Maintain narrow rows.
- Avoid high rates of nitrogen; succulent growth encourages disease development.
- Prune out old fruiting canes.
- Remove dead and dying canes after harvest.
- Remove and destroy prunings, infected canes, fruit, and debris promptly.
- Consider dormant applications of lime sulfur.
- Scout weekly.

Bramble Disease Management Resources

PUBLICATIONS:

From Cornell CCE Press:

[Cornell Pest Management Guidelines for Berry Crops](#) (2006) by Pritts, Heidenreich, Carroll, English-Loeb, and Wilcox.

From NRAES Press:

[Bramble Production Guide](#) (NRAES-35) (1991) edited by Marvin Pritts and David Handley. **NOTE:** Second edition is getting ready to go to print.

From APS Press:

[Compendium of Raspberry and Blackberry Diseases and Insects \(1991\)](#) by M. Ellis, R. Williams and B. Williamson.

DIAGNOSTIC SERVICES:

Diseases

To submit samples for disease or insect diagnosis, contact the Utah Plant Pest Diagnostic Laboratory, Utah State University, Biology Department, Logan UT 84322-5305.

<http://extension.usu.edu/uppd/>. Phone 435-797-2435.

USEFUL WEBSITES:

Cornell Pest Management Guidelines for Berry Crops

<http://www.fruit.cornell.edu/Berries/pestman/index.html>

Berry Diagnostic Tool

<http://extension.usu.edu/uppd/>

The Tree Fruit and Berry Pathology Website

<http://www.nysaes.cornell.edu/pp/extension/tfabp/>

New York Berry News

<http://www.nysaes.cornell.edu/pp/extension/tfabp/newslett.shtml>

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NURSERY SOURCES

It is not too early to start thinking about ordering plants for 2007. Following is an alphabetized list of berry nurseries throughout North America. No endorsement or discrimination is intended. Nurseries that wish to be included in future lists should contact Brent Black at blackb@ext.usu.edu. (This list was adapted from one developed by Cornell University. The original list is accessible at <http://www.fruit.cornell.edu/Berries/nurseries/>)

| <u>Nursery</u> | <u>Crops</u> | <u>Nursery</u> | <u>Crops</u> |
|---|--|---|---|
| Awald Farms 2195 Shirley Road North Collins NY 14111 phone: (716) 337-7162 www.awaldfarms.com | Red Raspberry Black Raspberry Blackberry | Norcal Nursery/Sakuma Bros. Farms PO Box 1012 Red Bluff CA 96080 phone: (530) 527-6200 fax: (530) 527-2921 www.sakumabros.com | Strawberry Raspberry |
| Boston Mountain Nurseries 20189 N Hwy 71 Mountainburg AR 72946 phone: (479) 369-2007 fax: (479) 369-2007 www.alcasoft.com/bostonmountain | Raspberry Blackberry Grape Currant & Gooseberry Elderberry | Nourse Farms Inc 41 River Rd South Deerfield MA 01373 phone: (413) 665-2658 fax: (413) 665-7888 www.noursefarms.com | Strawberry Raspberry Blackberry Currant & Gooseberry |
| Daisy Farms 28355 M-152 Dowagiac MI 49047 phone: (269) 782-6321 fax: (269) 782-7131 www.daisyfarms.net | Strawberry Raspberry Blackberry Currant & Gooseberry | One Green World 28696 S. Cramer Rd Molalla Or 97038-8576 phone: (877) 353-4028 fax: (800) 418-9983 www.onegreenworld.com | Strawberry Raspberry Blackberry Currant & Gooseberry Elderberry |
| Hartmann's Plant Company PO Box 100 Locata, MI 49063-0100 phone: (269) 253-4281 fax: (269) 253-4457 www.hartmannsplantcompany.com | Raspberry Blackberry Currant & Gooseberry | St. Lawrence Nurseries 325 State Hwy 345 Potsdam NY 13676 phone: (315) 265-6739 www.sln.potsdam.ny.us | Raspberry Currant Grape |
| Indiana Berry & Plant Co, LLC 5218 West 500 South Huntingburg IN 47542 phone:(800) 295-2226 fax: (812) 683-2004 www.inberry.com | Strawberry Raspberry Blackberry Currant & Gooseberry Grape Elderberry | Ken M Spooner Farms 9710 SR 163 E. Pullyap, WA 98374-1814 phone: (800) 532-5487 (253)-845-5519 fax: (253) 845-5717 www.spoonerfarms.com | Raspberry |
| Krohne Plant Farms Inc 65295 CR342 Hartford MI 49057 phone: (269) 424-5423 fax: (269) 424-3126 www.krohneplantfarms.com | Strawberry | Strawberry Tyme Farms Inc RR 2 Simcoe ONT N3Y 4K1 phone: (519) 426-3099 fax: (519) 426-2573 www.strawberrytyme.com | Strawberry Raspberry Blackberry Currant |
| Miller Nurseries Inc 5060 West Lake Rd Canandaigua NY 14424-8904 phone: (800) 863-9630 fax: (585) 396-2154 www.millernurseries.com | Strawberry Raspberry Blackberry Currant & Gooseberry Grape Elderberry | Ty Ty Plant Nursery 4723 US Highway 82W PO Box 130 Ty Ty, GA 31795 phone: (800) 972-2101 (229) 388-9999 | Raspberry Blackberry |

Clair Allen
UDAF
P.O. Box 146500
Salt Lake City UT 84114

2007 BERRY CONFERENCE AND 6TH NORTH AMERICAN STRAWBERRY SYMPOSIUM

*Crowne Plaza Hotel, Ventura Beach, California,
February 9-12, 2007*

Please reserve the dates of **February 9-12, 2007** for the annual conference of the North American Strawberry Growers Association (NASGA) and the North American Bramble Growers Association (NABGA) in Ventura Beach California. There will be two days of research, marketing and production presentations, poster sessions and special events planned over the weekend of February 10-11. An all-day bus tour of the nearby 12,000 acre **Oxnard Strawberry District** is planned on Monday. A very special banquet on Sunday evening will honor the remarkable strawberry breeding careers of Dr. Royce Bringhurst (A Utah native) and Dr. Gene Galletta. The Program Committee is committed to making this a world-class symposium for growers and scientists, and we eagerly look forward to seeing you at this lovely seaside area of Southern California in February 2007. **For More Information** visit the NASGA website at <http://www.nasga.org/> or contact: Kevin Schooley, Executive Director, North American Strawberry Growers Association
Tel 613 258-4587; <mailto:kconsult@allstream.net>



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