

June 2013

No. 35

Northeast Buckwheat Growers Newsletter

Thomas Björkman, Editor Horticulture Dept., Cornell-NYSAES, Geneva NY

2013 Buckwheat Field Day

The 2013 Northeast Buckwheat Field Day will be held at the farm of Rg Bell in Kendall, NY. Kendall is close to Lake Ontario, about 25 miles west of Rochester.

The field they will again be cosponsored by NOFA-NY.

We anticipate presentations about buckwheat production and harvesting.

The field day will be on Wednesday, August 28 from 1:00 to 4:00 PM.

There is no charge, and pre-registration is not required. The field day usually attracts about 30 growers with widely varied experience and different ways that buckwheat makes sense for their farm. Everyone has something special to add, and something in common with the rest. We have good discussions that help growers come away with several new ideas, and perhaps a good story or two.

Herbicide for buckwheat control

EPA recently added control of volunteer buckwheat to the registration of Audit herbicide. It has been registered in New York for use on fallow ground or on small grains. Audit is a halosulfuron herbicide.

If your combine adjustment as resulted in some of the grain going on the ground rather than in the bin, then buckwheat volunteers can be a problem.

Buckwheat seedlings can inhibit the fall growth of small grains. Audit can be applied at an ultra-low rate when the small grain is in the two-leaf stage if buckwheat seedlings are emerging at the same time.

On fallow ground, many herbicides will control buckwheat, as will cultivation. Audit may have less value in this application, unless it is also used to control some of the other weeds for which it has been registered.

Buckwheat Research and Extension

Extension support for buckwheat is very limited in the US. A recent addition is Dr. Hans Kandel at North Dakota State. He has been on the agronomy faculty for many years, and has recently taken over buckwheat in addition to his responsibilities with soybeans and dry beans.

Clayton Campbell, whose long career as a buckwheat breeder has produced almost all the varieties we grow in North America today, is now the research leader for McKay Seeds in Moses Lake, Washington. McKay raises several thousand acres of buckwheat for sale to Asia, as well as small grains and other crops suited to the inland Northwest.

Buckwheat and health—better than fiction

Larry Eisenberg foresaw the value of buckwheat in combatting obesity in a short piece of satirical fiction published over five decades ago.

He wrote, “Kasha oil, when taken at meal time forms an unbreachable oily film about the food. Consequently, whatever has been eaten will not be absorbed by the body.” The reality turns out to be even better, if somewhat opposite. Kasha protein binds to an oil (cholesterol) so that it is not absorbed by the body.

This is one of the properties of buckwheat that make it part of a healthy modern diet, especially with the prevalence of metabolic syndrome.

Eisenberg had a long career as a research scientist, and as a science fiction author. He is now known for the limericks he offers in the comment section of the New York Times website.

Eisenberg, L. 1962. Dr. Beltzov’s polyunsaturated kasha oil diet. Harpers Magazine. June pp 33-34



Above: A successful buckwheat stand 18 days after sowing should nearly cover the ground.

Research Note — shatter resistance

Seed shattering at harvest is a significant challenge for Northeast growers, but it is even more challenging elsewhere where seed ripening is less uniform so that ripe seed shatters even before the last grain is ripe. There has been some progress in breeding for shatter resistance by creating a thicker pedicel (the stem of each kernel).

The goal is to produce a buckwheat plant that will hold on to the grain until the leaves have dropped, and with a stem that will be strong enough to hold the grain clusters even after the stem is dry. These are difficult goals to achieve, but this work is a promising step forward.

These breeders’ standard variety, ‘Kitawasesoba’, is similar to many cultivated types. A tetraploid, ‘Hokkai 3’, had about twice the breaking strength. A tetraploid variety called ‘PennQuad’ was developed at Penn State in the 1960s. While it had some attractive physical traits, its yield was so low that it was never developed commercially.

A new variety from Dr. Alexeeva in Ukraine, ‘Nika’, has yielded well in early trials. It is both tetraploid and green-flowered. Thus, the challenges in breeding high-yielding shatter resistant tetraploids are now being solved.

The researchers found a particular mutation doubled the pedicel diameter and the breaking strength as well. To increase the breaking strength further, they bred it into a tetraploid variety and found that the combination added shatter resistance from both sources.

This pedicel-fattening mutation also causes the flowers to be green. There is not yet an explanation. We also don’t know whether bees visit green flowers as readily as they do white and pink flowers.

Suzuki, T. Y. Mukasa, T. Morishita, S. Takigawa and T. Noda. 2012. Varietal differences in annual variation in breaking tensile strength in common buckwheat. *Fagopyrum* 29:13-16

The Cornell fact sheet on buckwheat planting can be found online at nmsp.cals.cornell.edu/publications/factsheets/factsheet50.pdf.

Freshly made noodles are springier

Fresh buckwheat noodles, soba, are greatly valued in Japan. Soba-making may be second only to sushi as a cultural food art form, and it is considerably more subtle. The springiness of the noodle is crucial, as is the characteristic of *nodogoshi*, which has been described to me as the way it feels going down the throat. The literal translation is *Passing the Throat*. Both of these properties are related to what cereal scientists call cutting strength.

An investigation from Kiyokazu Ikeda's lab at Kobe Gakuin University found that after a ball of dough is formed, protease enzymes in the dough start breaking down the protein. Buckwheat noodles are hard to make because they contain no gluten. Gluten is the sticky protein that holds bread dough together. Losing what little sticky protein is in buckwheat

dough can be a problem. Indeed they found that once the flour is mixed with water, waiting even 3 hours to finish making the noodles can make the dough softer.

This result fits in with the traditional dictum, *San-Tate*, that top soba noodles should be freshly ground (*Hiki-tate*), freshly made (*Uchi-tate*), and freshly cooked (*Yude-tate*).

Asami, Y., T. Konishi, S. Ikeda and K. Ikeda. 2012. Mechanical characteristics of resultant noodles prepared by delayed cutting of buckwheat dough. Fagopyrum 29: 17-20

Editors note: I had the pleasure of studying noodle making with Dr. Ikeda on a trip to southern Japan. He is the editor of the buckwheat journal *Fagopyrum*.

Research note — rotation value of buckwheat

Deborah Samac and colleagues with USDA Agricultural Research Service in St. Paul, Minnesota, have been investigating the benefit of buckwheat in alfalfa production. Their particular concern has been ways to reduce diseases of alfalfa that are problematic in the wheel tracks. Wheel-track compaction is a significant problem in alfalfa stands, which are harvested many times each year.

In the wheel tracks, they measured about 10% lower plant stands and 15 to 20% lower yields. At one research site, where crown rot was prevalent, alfalfa planted after a buckwheat crop suffered only an 8% yield loss. At a high-yielding site, with less crown rot, there was no difference attributable to buckwheat.

The researchers anticipated finding differences in the prevalence of crown rot pathogens, or in inhibitors of those

pathogens. However those differences were slight.

It is possible that the small differences in crown rot antagonists were enough to reduce the disease. One might also consider whether buckwheat had affected the soil condition in the wheel tracks so that the alfalfa tolerated traffic better.

Deborah A. Samac & JoAnn F. S. Lamb & Linda L. Kinkel & Lindsey Hanson. 2013. Effect of wheel traffic and green manure treatments on forage yield and crown rot in alfalfa (Medicago sativa). Plant and Soil (in press, published online)

DOI 10.1007/s11104-013-1746-5

**Thomas Björkman,
Editor**

Dept. of Horticulture
Cornell University
630 W. North St.
Geneva, NY 14456

PHONE:
315-787-2218

E-MAIL:
tnb1@cornell.edu

[www.hort.cornell.edu/
bjorkman/lab/buck/main.
php](http://www.hort.cornell.edu/bjorkman/lab/buck/main.php)

How much soybean ground will go to buckwheat in 2013?

In field-crop rotations, it can be helpful to think of buckwheat as a super-early soybean. The soil has been too wet to plant during much of the soybean-planting season. Therefore, Northeastern soybean growers may find buckwheat to be a good way to finish planting their planned soybean acres.

Mike Stanyard, Cornell Cooperative Extension Specialist for field crops,

estimates that there are about 50,000 acres of New-York soybean ground yet to be planted as of June 27. The cutoff for most of them is the first of July. It is likely that tens of thousands of acres will be available for buckwheat. If even a small proportion of that is contracted to buckwheat, it will go a long way to making the Northeast self-sufficient for buckwheat.

About the Northeast Buckwheat Growers Association

The NBGA is made up of about 150 buckwheat growers in the Northeast.

Membership may be obtained by contacting the editor and providing contact information (address, phone, email). There is currently no charge to join.

This semi-annual newsletter goes out to those who have signed up as members of NBGA. The printed version is sent to

members in the Northeast, and electronic version elsewhere. The complete member list is distributed to members each fall.

The Northeast Buckwheat Growers Association has been on the World Wide Web since 1998. An on-line Buckwheat Production Guide for the Northeast and back issues of this newsletter are available there.



Thomas Björkman *Northeast Buckwheat Growers Association*

Cornell University
New York State Agricultural Experiment Station

Department of Horticulture
630 W. North St.
Geneva, NY 14456