



Harmony Valley Farm

An update for our Community Supported Agriculture Members - Since 1993

July 8-9, 2011

GMO's & Soil Pathogens... What does the future hold?

The letter below was written by Colonel (Ret.) Don Huber, Emeritus Professor, Purdue University. It was not intended for public dissemination, but was written to U.S. Secretary of Agriculture Tom Vilsack as a request for help to expedite the science and investigation surrounding a very serious biological finding. In the May 2011 issue of Acres USA, Editor Chris Walters published an interview with Col. Huber that sheds light on the science and concerns that prompted this letter. The information is alarming and we feel it is important for people to know and understand what is happening on this front. We'll share more information from the interview in next week's newsletter.

Col. Huber's letter as printed in Acres USA, May 2011:

January 16, 2011

Dear Secretary Vilsack:

A team of senior plant and animal scientists have recently brought to my attention the discovery of an electron microscopic pathogen that appears to significantly impact the health of plants, animals, and probably human beings. Based on a review of the data, it is widespread, very serious and is in much higher concentrations in Roundup Ready soybeans and corn—suggesting a link with the RR gene or more likely the presence of Roundup. This organism appears NEW to science.

This is highly sensitive information that could result in a collapse of US soy and corn export markets and significant disruption of domestic food and feed supplies. On the other hand, this new organism may already be responsible for significant harm. My colleagues and I are therefore moving our investigation forward with speed and discretion, and seek assistance from the USDA and other entities to identify the pathogen's source, prevalence, implications, and remedies.I believe the threat we are facing from this pathogen is unique and of a high risk status. In layman's terms, it should be treated as an emergency.

We are informing the USDA of our findings at this early stage, specifically due to your pending decision regarding approval of RR alfalfa. Naturally, if either the RR gene or Roundup itself is a promoter or co-factor of this pathogen, then such approval could be a calamity. Based on the current evidence, the only reasonable action at this time would be to delay deregulation at least until sufficient data has exonerated the RR system, if it does.

For the past 40 years, I have been a scientist in the professional and military agencies that

THIS WEEK'S BOX

GREEN TOP CARROTS: See vegetable feature

SUGAR SNAP PEAS: Sugar snap peas are plump pods of deliciousness. Remove the strings at the top and bottom of the pods and eat them raw or blanch them in boiling water for one minute and cool quickly to retain their integrity. Use in salads, stir-fries or sautéed in a little butter.

CUCUMBERS: They add a wonderful crunch to salads and sandwiches and can be enjoyed with skins on, sliced, diced or cut into long strips.

MINI GREEN ROMAINE OR GREEN BOSTON LETTUCE: Dice and cook some crisp bacon, add croutons and Caesar dressing for a romaine summer salad sure to please.

BROCCOLI: Enjoy raw or cooked, you can peel the broccoli stems before cooking and eat those as well. Broccoli cooks quickly, so when steaming or boiling check after a few minutes for doneness.

SWEETHEART CABBAGE: The unusual shape of the sweetheart cabbage adds to its enjoyment. Use as you would any cabbage, in fresh slaw, cooked briefly, or stuffed. Make a vegetable sauté with sliced cabbage, sliced fennel bulb, green or yellow beans, sugar peas and summer squash. Sauté in a little butter and oil; add the sugar peas and summer squash last, they have a quicker cooking time.

RADISH SEED PODS: We have an exciting new crop for you this week! To identify this vegetable, look for the bundle of stems with long, pointy pods on them. You will want to pick the pods off the stem and discard the stem. If there are flowers or small, immature pods on the top of your stems, you can pick these off and use them as well. You'll find the radish pods to have a very sharp, pungent flavor when eaten raw. I was surprised to find their flavor changes a lot when cooked. They are best cooked quickly, stir-fry method. Just heat oil in a sauté pan and add the pods to the hot oil. Stir-fry just until you see the color change to bright green. Remove them from the heat and they are ready to go, simply dress with a drizzle of sesame oil or a splash of soy sauce. Add these to stir-fries or serve atop an Asian-influenced chicken salad for a dramatic presentation. Occasionally you might find a larger pod closer to the bottom of the stem that may be a little tough. Just discard that one and use the smaller ones on top. Let us know what you think! Try out the recipe on the back of the newsletter too!

ARUGULA: The small green leaves of arugula have a slightly peppery taste and add a new dimension to your fresh salads. The greens also make a tasty pesto to use on pasta or a grilled chicken sandwich.

FRESH GARLIC: The white bulb of the fresh garlic minces and slices very conveniently to use as you would any garlic. Sautéed in a little butter and oil it makes a great start to a sautéed vegetable dish. You'll find fresh garlic to be juicy and flavorful, different than cured garlic's taste and texture.

WHITE SCALLIONS OR WHITE CIPOLLINI ONIONS: Both of these have an amazing light onion flavor that complements any dish. Wash and slice to add raw to salads, braised dishes, or simply sauté and enjoy with your steak or burger.

HOLY BASIL: See the back of the newsletter for info and a recipe

ZUCCHINI AND SCALLOPINI SQUASH: Young zucchini squash has a tender skin and flesh with a mild and buttery flavor. Relatively quick cooking time makes zucchini squash ideal sautéed with a little olive oil, minced garlic and salt and pepper. The Scallopini squash has the distinct scalloped edge that makes it so interesting on the plate. No need to peel, just wash, slice & prepare.

GREEN & YELLOW BEANS: Long and thin and I find they taste best when simmered in lightly salted water, then drained and tossed with butter and lemon juice, add salt and pepper to taste.

BABY BOK CHOI: Great in a stir-fry or used in coleslaw or raw salads. Sprinkle with soy sauce or sesame oil for a quick snack.

evaluate and prepare for natural and manmade biological threats, including germ warfare and disease outbreaks. Based on this experience, I believe the threat we are facing from this pathogen is unique and of a high risk status. In layman's terms, it should be treated as an emergency.

A diverse set of researchers working on this problem have contributed various pieces of the puzzle, which together presents the following disturbing scenario:

Unique Physical Properties

This previously unknown organism is only visible under an electron microscope, with an approximate size range equal to a medium size virus. It is able to reproduce and appears to be a micro-fungal-like organism. If so, it would be the first such micro-fungus ever identified. There is strong evidence that this infectious agent promotes diseases of both plants and mammals, which is very rare.

Pathogen Location & Concentration

It is found in high concentrations in Roundup Ready soybean meal and corn, distillers meal, fermentation feed products, pig stomach contents, and pig and cattle placentas.

Linked with Outbreaks of Plant Disease

The organism is prolific in plants infected with two pervasive diseases that are driving down yields and farmer income—sudden death syndrome (SDS) in soy, and Goss' wilt in corn. The pathogen is also found in the fungal causative agent of SDS (*Fusarium slavn fsp glycines*).

Implicated in Animal Reproductive Failure

Laboratory tests have confirmed the presence of this organism in a wide variety of livestock that have experienced spontaneous abortions and infertility. Preliminary results from ongoing research have also been able to reproduce abortions in a clinical setting.

The pathogen may explain the escalating frequency of infertility and spontaneous abortions over the past few years in US cattle, dairy, swine, and horse operations. These include recent reports of infertility rates in dairy heifers of over 20%, and spontaneous abortions in cattle as high as 45%.

For example, 450 of 1,000 pregnant heifers fed wheatlage experienced spontaneous abortions. Over the same period, another 1,000 heifers from the same herd that were raised on hay had no abortions. High concentrations of the pathogen were confirmed on the wheatlage, which likely had been under weed management using glyphosate.

Recommendations

In summary, because of the high titer of this new animal pathogen in Roundup Ready crops, and its association with plant and animal diseases that are reaching epidemic proportions, we request USDA's participation in a multi-agency investigation, and an immediate moratorium on the deregulation of RR crops until the causal/predisposing relationship with glyphosate and/or RR plants can be ruled out as a threat to crop and animal production and human health.

It is urgent to examine whether the side-effects of glyphosate use may have facilitated the growth of this pathogen, or allowed it to cause greater harm to weakened plant and animal hosts. It is well-documented that glyphosate promotes oil pathogens and is already implicated with the increase of more than 40 plant diseases; it dismantles plant defenses by chelating vital nutrients; and it reduces the bioavailability of nutrients in feed, which in turn can cause animal disorders. To properly evaluate these factors, we request access to the relevant USDA data.

I have studied plant pathogens for more than 50 years. We are now seeing an unprecedented trend of increasing plant and animal diseases and disorders. This pathogen may be instrumental to understanding and solving this problem. It deserves immediate attention with significant resources to avoid a general collapse of our critical agricultural infrastructure.

Sincerely,

Colonel (Ret.) Don M. Huber
Emeritus Professor, Purdue University
APS Coordinator, USDA National Plant Disease Recovery System (NPDORS)

Vegetable Feature: Green Top Carrots

Carrots are possibly the most versatile and universal root vegetable on the market. Very few vegetables can claim all the applications that carrots so easily lend themselves to; they can be eaten raw, boiled, sauteed, roasted or pureed. They can be juiced, pickled or made into a spread. With little effort, carrots also cross the line of sweet and savory, making delicious cakes, sorbets and quick breads.

However, one part of the carrot that is underutilized especially in our culture, are the tops. They are highly nutritious and easy to use! They can be mixed in with other salad greens, stirred into soups or made into a pesto. Carrot tops are high in potassium and Vitamin K and are an outstanding source of chlorophyll, which contains cleansing properties that purify the blood, lymph nodes, and adrenal glands. Tea made from carrot tops boasts detoxifying and diuretic qualities that aid in kidney health...and it's tasty!

There are several varieties of carrots. The majority of carrots found grown in this country are a variety called Imperator. These carrots are bred to be hard so that they can handle mechanical harvesting and handling. At Harmony Valley Farm, we have done side by side tastings of as many as 15 different types of carrots at a time. We're constantly doing trials of different varieties to try to find the ones with the best taste and texture characteristics in addition to a good genetic package and disease resistance. In the end, we chose a few varieties. We mostly grow a type of carrot called Nantes. This type tends to be more sweet, crisp, and a bit more brittle. We also grow a type called Chantenay, our purple and yellow carrots. This week's carrots are an orange variety called Mokum. This is a Dutch Nantes carrot that I think you'll find to be delicious and perfect for eating fresh.

To store green top carrots, remove the tops and store separately from the roots. The greens will continue to draw moisture from the roots and you will end up with a limp carrot. If your carrots do go a bit limp before you are able to use them, soak them in ice water for at least 30 minutes to crisp them up again. Avoid storing carrots near fruit. As fruits ripen they release ethylene gas that can give carrots a bitter taste and decrease the storage life. Carrots do not need to be peeled. In fact, most of the mineral content lies close to the surface and removing the skins strips them of their healthful goodness. Just give them a rinse and light scrub to remove any dirt.

Holy Basil, also known as Tulsi, is one of the most important herbs in Ayurvedic medicine. It is thought to have many beneficial health effects including digestive system support & blood sugar balance. It may strengthen the immune system and reduce skin disorders such as eczema, among many other benefits. While most often consumed as a tea, tincture or oil preparation for medicinal effects, Holy Basil can also be used as a culinary herb. You may use both the leaves and the flowers; discard the stem. You'll find this herb to have a more pungent flavor than traditional Italian basil, with hints of licorice.

It is used in dishes from Asian cultures, including Thai & Indian. Add it at the end of cooking stir-fries and curry dishes. It goes well with cardamom, black pepper, mustard seeds, and cloves. It can also be dried and used for tea: Steep Holy Basil in hot water with cinnamon and cardamom. Sweeten with honey and add a touch of milk or cream for a warm beverage.

Radish Pod Stir Fry with Ground Pork and Holy Basil Serves 3-4

1 Tbsp Sunflower Oil
½ pound ground pork (or chicken, tofu or mushrooms)
2 tsp mustard seeds
½ tsp red chili pepper flakes
2 cloves garlic
⅓ tsp ground white pepper
1 tsp fish sauce
1 Tbsp soy sauce
1 cup radish pods or bok choy
10 Holy Basil leaves, torn

Heat ½ Tbsp Sunflower oil in a medium sauté pan over medium high heat. Add ground pork and brown. Remove pork from pan. Add garlic and stir-fry about 30 seconds. Working quickly, add mustard seeds, chili peppers and radish pods or bok choy. Stir fry quickly, keeping vegetables moving in the pan. When the radish pods turn bright green (about 1 minute), add pork, fish sauce, soy sauce and white pepper. Stir fry for another 2-3 minutes. Remove from heat and stir in Holy Basil. Serve over rice.

Ginger-Carrot Salad

Serves 4 *Original recipe by Chef Brigitte*

4 medium carrots, grated
4 carrot tops
1 cup cabbage, thinly cut strips
1 tsp fresh ginger, grated
½ tsp ground coriander
1 small orange, zested and juiced
1 tsp honey
1Tbsp olive oil
S&P to taste

-Pick small bouquets of carrot tops from stems.

-Use a microplane or fine cheese grater to grate ginger.

-Combine all ingredients, taste and adjust seasoning. Allow to sit in the refrigerator at least 30 minutes before serving.