News From...
Summer 2012
ADVANCING ECO-AGRICULTURE
Providing the Missing Link for Full Potential Agriculture

The Journey to Organic

From Eden to the Wasteland and Back

by: Amy Hibberd

Bob Wilt, Oregon Blueberry Farmer & Biological Agriculture Pioneer, farms the land his father bought in fertile Corvallis, Oregon in 1942. He is an affable man, and endlessly patient with the untutored as he warms to his subject of applied biological agriculture. His love of farming underscores his every word. His farm, Sunset Valley Organics has earned a dominant position in the niche market of high quality organic blueberries. Four ounces of Sunset Valley freeze dried blueberry powder retails for $19.95; 16 oz. of his freeze dried organic blueberry slices sells for $65.00. Devotees post enthusiastic reviews of his products online. Sunset Valley's robust yields and booming businesses are a far cry from the disease ridden, depleted farm it had become by 1998.

Wilt has worked with single minded dedication to turn his farm around from what he calls a 'chemical addiction.' "I guess you could say I was like a druggie that had hit rock bottom; the more you need the more you apply…the more you apply, the more you need."

"We put in blueberries in 1970, and things went really well up until about 95 or 96. I got the bright idea I wanted a beautiful, manicured field--you know, with nothing growing between the rows." His bright idea, fueled by mega doses of potassium chloride, caused his farm to "basically tank on nitrogen. I lost about a third of my crop in 1998." Faced with an intractable fungus outbreak in 1998, Wilt applied a strong fungicide program to control disease. "By 2001 we had really short fruitwood with only 2--3 buds on a limb. Our yields went backward. I spent like a sailor trying to turn that around."

(Continued on Pg. 2)

Greetings to our loyal farmers...

For many of us, the fast paced spring season of planting is behind us, crops are growing rapidly and we can begin to note the rapid changes taking place in the plant's life cycle. I always find the plant growth and reproductive cycles fascinating to contemplate. We can witness the miracle of life every day in the plants we help to nourish and sustain. This miracle of life can then be transferred onto the animals and people that eat the foods we grow. Each of us has an incredible opportunity to be a steward of the resources we have been gifted and help improve the quality of the lives around us, whether they be plant, animal, or our fellow mankind.

We are again experiencing an exceptionally dry spring this year, similar to what we had later in the year last year. Vegetable crops which are not being irrigated are suffering stress from lack of moisture. Garlic crops are already beginning to ripen in early June as I write this, which is almost a month ahead of what we would usually expect, and some of the earlier corn crops in the area are already approaching knee high, which is almost unheard of in this area at this time of year. It will be interesting to see what further vagaries of the weather we may witness as the year continues. Many Midwestern soils tighten their hold on available nutrients when the clay colloids become dry, thus limiting plant growth and the potential for reproduction. This can be seen especially clearly on multiple fruiting crops such as soybeans, which often lose some of their reproductive potential during the

(Continued on Pg. 3)

Join our... Farming Insights Calls
See page 5 for details

The Journey to Organic *(Continued from Pg. 1)*

A decade ago, the resources to support the farmer in search of practical, real world bio-agricultural techniques were few and far between. Wilt read books, but readily admitted they were written by academics rather than the actual farmer, and were heavy on theory and light on technique. His search for salvation led him to consult with soil biologist Dr. Elaine Ingham. "She taught me soil biology 101 in nine hours. Suddenly I was no longer using potassium chloride and nitrate; I was learning about compost tea and liquid fish."

As with any recovering addict, the temptation to return to the original drug of choice is sometimes overwhelming. Wilt questioned himself frequently as the inevitable tide of pests and disease rose over his fragile crop and depleted soil. "I felt like a druggie that had been taken off all my drugs; I just wanted that 2.5 gallon jug. That first year was very difficult. Other farms in our area were down 20%, but we held our own." A meticulous believer in metrics, Wilt convinced himself to stay the course. Although he considers himself a biological farmer, he went organic. "I am a biological farmer, not an organic farmer--I just get paid to say that," he explained.

For the first five or six years Bob Wilt charged into biological farming with very little daily guidance. "I was basically self-taught." He had the time with Dr. Elaine Ingman, and attended a couple of seminars taught by Dr. Arden Andersen; read voraciously and observed his crops with a keen eye. "In the last four years I met John (Kempf) and David (Miller) of Advancing Eco-Agriculture. We are making a lot more progress. We have to do better yet. Every time I hit a goal it seems like they move the goal post. You are always chasing that dream."

"In 2001 when we decided to change our approach the ground was hard. There were insects, and our leaves were small. Now the field feels alive. Back then I sprayed herbicide on the whole row to keep the field 'clean.' Now there is foliage in between the rows. I decided I would not be organic by neglect. We mow to keep our field clean and tidy. You need to get through those rows to do other operations."

Sunset Valley has developed its own compost tea, a product that is consistently higher in microbes per milliliter than the industry standard of 10 to the 6th power. "We consistently hit 10 to the 9th and 10 to the 10th power," explained Wilt. The higher the concentration of microbes, the richer the tea and the more thoroughly it replenishes the soil. A neighbor's worm bins feed the vermi compost for the tea, which is brewed for four days, twice as long as the industry standard. He swears by his tea, which he says is as effective as anything else and costs 20 percent of the cost of chemical fungicide.

A saltwater fish source is the basis for the fish emulsion. Wilt swears by saltwater fish rather than freshwater, and has a source that heats ocean fish to 130 degrees 'til it liquefies. "There are more than 90 minerals in saltwater fish--they have been living in the ocean all their lives. The difference is subtle, but after several years of usage you will see a positive result." Wilt is convinced the depletion of our agricultural soil is mineral based, and can be replenished fairly quickly with the right techniques.

How hard was the leap of faith from conventional agriculture techniques to biological farming? Sunset Valley Organics saw positive results within year one. "Remember, this was a whole new approach. There were very few practical resources and I had no idea what I was doing. But in a year when others had a 20% drop due to bad weather, we held our own."

Wilt is candid about his fear. "I was a non-believer when we started. But when we stopped using nitrogen fertilizer, the insects went away. It was hard to let go of fungicides though. Lots of diseases get in the blossoms and do not show up until the harvest. I had a lot of fear, and it was hard to just depend on biology. I struggled terribly the first two or three years," he explained. However, he is adamant that getting the soil properly mineralized will help fight off fungus.

For the farmer who feels safe with the 2.5 gallon chemical solution, biological farming is a frightening undertaking. Wilt explained that his soil was "basically dead." That level of depletion started him on a lonely quest that has become a movement and is, some say, the future of planetary agriculture. "Arden Andersen told me this a great paradigm shift, and that I had to put the hat on backwards. Of course, that is the hardest thing for a grower to do; start believing there is a better way."

In retrospect, Bob Wilt said he did almost everything wrong when he began his impromptu, untutored launch into biological agriculture. He explained that the biology that turned his farm around first required a home, and his initial task was to construct that home. "You have to build a home for biology; balancing carbon, minerals, food; then introduce biology. That takes commitment." Wilt had the commitment of an addict who had hit bottom, a mindset that has served him well on his journey.

How are his ideas received by his neighbors in Oregon? They are curious. Wilt has seen field men from fertilizer companies sneaking into his fields looking for fungus. (There is none.) He has shared his ideas about using compost tea rather than chemical fungicides, only to see his neighbors go back to the 2 1/2 gallon bucket solution.

Meanwhile, Wilt's products are exceptional. The brix of his blueberries (a refractometer rating that measures sugar in a plant's sap) is a consistent 16; with a warm summer he is hoping to sustain a new high of 21 in some flats. Prior to altering his approach, Sunset Valley Organics was producing fruit with a brix of 10--12. Wilt recently tested the brix of one of his hard, green, underdeveloped strawberries and found it to have a brix of 8.25 compared to a supermarket berry with a brix of 8.5. His yields and quality speak for themselves. His berries also have a longer shelf life. "Chemically-grown berries have a very brief window from ripe to rot.", says Dave de Vries of Advancing Eco-Agriculture.

The field metrics are clear. Sunset Valley Organics' chemical methods were producing at a low of 6" of fruitwood with 2--3 buds; of those, half the fruit would abort. Ten years later, he is seeing as high as 30" of fruitwood with as many as 20 buds. Instead of 15 berries he is now getting 200 per leader, representing a 1300% increase in yield with bio-agricultural methods vs. chemical methods. Those kind of results have made a believer of Bob Wilt.

(Continued on Pg. 4)

Greetings to our loyal farmers...cont'd (from Pg. 1)

growing season; dropped blossoms, lack of pollination, empty pods, light test weight, etc. are all symptoms of a failing nutrient delivery system.

We are looking forward to a great field day this year. You can expect to meet many people with shared interests as well as witness firsthand some of the changes being made at AEA. We will have some very interesting presenters with very innovative and enlightening information to which I am very much looking forward. ---We will have the opportunity to learn firsthand some of the interactions between mineral nutrition and plant disease and how we can transfer that knowledge to the field to produce healthier crops with stronger immunity. I am looking forward to seeing you there!

Until then, happy growing!
John

"Study books and observe nature.
When the two don't agree, throw out the books."
William A. Albrecht

Growing Quality Forages

by Dave de Vries

Forages can be successfully grown on all types of soils. Some soil types can present a greater challenge but, with the right attention to soil organic matter and nutrition, any soil can grow healthy forages. Because soil acidity interferes with nitrogen fixation, it is important to monitor and correct any issues concerning pH of 6.2 or less.

Fertilizing Strategy

A well planned nutrition program is necessary for successful forage production. Your nutrition program should be designed to achieve three main goals:

1. Provide levels of nutrients that result in maximum yield and quality of forage.
2. Provide an environment in which Rhizobium bacteria can efficiently fix nitrogen. This eliminates the need for nitrogen fertilizer and also ensures forages with high protein content.
3. Provide soil fertility and other soil conditions that ensure longevity of the alfalfa stand.

The first step in establishing a nutrition program for forage, whether for a new stand or for existing crops, is to conduct a proper soil analysis. A soil analysis will provide an inventory of the soil nutrient content upon which a nutrient strategy can be developed.

Newly planted forage needs a readily available supply of phosphorus, potassium, calcium and other plant nutrients immediately after emergence. It is important to use a high quality natural planting solution to promote effective and uniform germination ato eliminate the possibility of burning the seed. A quality natural planting solution can be applied directly to the seed for maximum efficiency and effect.

(Continued on Pg. 7)

ADVANCING ECO-AGRICULTURE

EcoAg 2012

Mark the calendar AEA Field Day 7/17!

Plans for EcoAg 2012 are nearly complete. We're very excited to have some of the industry's strongest thought leaders who will be speaking at this year's event.

Michael McNeil, Ph.D., will be speaking about ***Mineral Nutrition as Preventer of Plant Disease***

Dr. Arden Anderson, D.O., Ph.D., will be speaking on ***Positive Changes in Agriculture: Perspectives, Models, Practices***

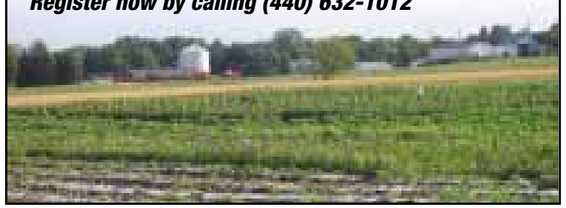
John Kemp, Founder and President, Advancing Eco-Agriculture will be speaking on ***The Keys to Successful Cover Cropping***

In addition, we've been making some progressive improvements and additions to our company to serve you better. Some of these improvements include additional staff, additional manufacturing capacity, and more. You will have the opportunity to see some great growing trials and real-life farming with our products. We hope you will make plans to come see our exciting additions and to meet our new staff.

John is very excited this year to share that the family farm has now adopted a complete AEA nutritional system for its crops that are sold to the market. While the family farm has used AEA's plant nutrition in the past, this is the first year that his brother, the family farm manager, will be using a complete program specially designed by John. We're also hoping to see some incredible things from the family's private vegetable garden this year, too!

DATE: **JULY 17, 2012**
TIME: **9am – 4pm**
WHERE: 15266 Hayes Road, Middlefield, OH (morning)
4551 Parks West Road, Middlefield, OH (afternoon)

Register now by calling (440) 632-1012



The Journey to Organic *(Continued from Pg. 3)*

Does Wilt sense any change in the wind? "My neighbors who have unproductive soil have not yet connected the dots. One neighbor who is applying carbon is now using half as many nitrates." Maybe that is a start. Biological farmers agree the principles are simple: most soils do not contain the much needed balance to support healthy plants. Microbes make nutrients bioavailable. Chemical fungicides, and chemical fertilizers kill microbes, preventing the soil life from making nutrients available. Unfortunately, dead soil cannot be rebuilt overnight. It takes two to three years.

Wilt is foliar feeding his wheat every ten days. Still the cost of this program is way below the cost of nitrates, plus it is necessary to apply a growth inhibitor along with nitrates so the plant does not become too tall. Although his neighbors might get a higher yield, he still makes more profit due to his lower cost. "My wheat kernels are denser, plumper and cost a lot less to produce."

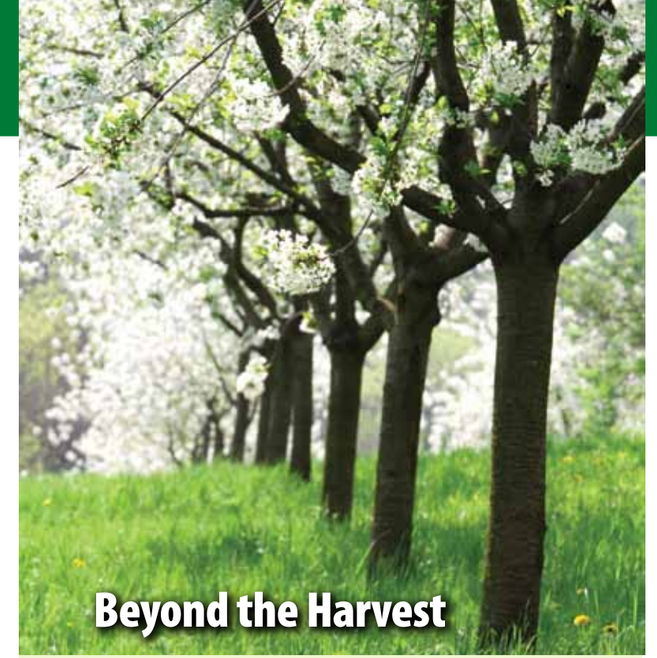
That's the leap of faith a newbie biological farmer must take. Wilt speculates that the Midwest may be more inclined to take that leap than the Oregon farmer. "Oregon has younger soil, in terms of agriculture. Some of our land has only been cleared for 30-40 years. The Midwest has been farmed for hundreds of years. They may be more inclined to change sooner than the West."

Sunset Valley Organics has 105 acres in berries, including blues, raspberries, strawberries and blackberries, as well as 85 acres of biologically farmed wheat. "Most farmers are operating with 12-month bank loans", mused Wilt. "My bank did not knowingly participate in a five or ten year plan. I had to let my soil recover first. Knowing what I know now, I could accomplish the same results in four or five years."

What is the future of this method? Chris Daugherty is an Oregon-based AEA soil and plant health specialist who met Bob Wilt in his Oregon fields. "Bob dug in and developed a holistic approach. He has developed an entire system with a strong focus on developing a high quality compost," observed Daugherty. "His blueberries are fabulous! He is a pioneer who has invented a new plough. He is actually farming for the future."

Dave de Vries, National Sales Manager for Advancing Eco-Agriculture, insists this approach is one whose time has come; not just for the season, but for the world. "People are looking for higher quality foods. Now, with the information highway people can get the information they need to make it happen."

To learn more about ***Sunset Valley Organics*** or to buy the best blueberries in the country, visit ***www.sunsetvalleyorganics.com***



Beyond the Harvest

by Craig Dow

Deciduous fruit trees such as apple, pear, peach and plum undergo a series of distinct stages during the annual cycle of fruit production. Although specific stages vary across species, most fruit trees follow a consistent pattern of growth and development. Fruit growers monitor these stages to gauge progress of their crop and determine things such as when to prune, and when to apply targeted nutrition to help the tree reach its genetic potential. Some people think that fruit trees only bear fruit every other year or that they have a cyclical pattern to yield. The truth is that the tree will produce as much fruit as it has energy to produce. If the tree is low on energy, it will need to build up energy in order to perform high levels of reproduction and fruit development. It is typical for a tree to run low on energy at the end of a harvest. If we do not provide nutrition to replenish energy in our trees at the end of harvest, they will be deficient the following season and fruit production will suffer.

Nearing dormancy, in autumn, deciduous fruit trees lose their leaves and store energy in the trunk and roots to sustain them during winter dormancy. Developing buds become inactive in preparation for winter survival. Not commonly known to the lay person, fruit trees actually require a certain number of chill hours, hours when temperatures remain between 32 to 45 degrees Fahrenheit, to achieve optimal fruit production. Another factor that can affect production is pruning. Correct pruning during dormancy produces vigorous spring growth while aggressive pruning can cause excessive growth of leaves and stems, leaving less energy for fruit production.

The swelling of flower buds in early spring initiates the budding stage. Buds that have received the correct number of chill hours emerge from dormancy, ready to begin growing when temperatures warm in springtime. During the budding stage, growers should focus on pollination strength, root strength,

(Continued on page 6)

Mark your 2012-2013 calendar!

Farming Insights Conference Calls

Each month, John Kempf and his staff host an informative call to discuss a topic of interest. Each call starts with a topic lecture, followed by lively and enlightening Q&A. We hope you will join us. All calls are held at 7pm Eastern time. The schedule of upcoming calls is as follows:

CALL DATE	TOPIC
July 11	***Keeping A Close Watch on Plant Health:*** *Using your 5 Senses and good old common sense to monitor plant health in the field.*
August 8	***Tips for Effective Tissue Analysis:*** *There's a right way to do it to get the most accurate results.*
September 5	***Don't "Peter Out" Near the Finish Line:*** *This is a discussion of how to boost crop performance at a critical time of need for nutrients as they build fruit. This is the time to keep up the nutrient programs to achieve the best possible quality.*
October 3	***The Right Time for Harvest:*** *Know when its time to harvest for the best possible results.*
November 7	***Planning for Next Season:*** *Looking at results, evaluate methods and practices to determine what small changes in course are necessary for improvements in crop placement, nutrition application, etc.*
December 12	***Reading Soil Analysis Reports:*** *It's not all Greek. The key is to understand what the numbers mean, which numbers matter and which ones don't.*
January 9	***Selecting Quality Seed:*** *Genetic Potential is all in the seed. The best seed gives you the best opportunity Learn what you can do to eliminate nutrient and micro nutrient deficiency; reduce the impacts of drought or oversaturation; ward off insects; and build up resistance to disease.*
February 13	***Planning for the Entire Growing Season:*** *Developing a good nutrition plan for the whole growing season will ensure that your plants will have adequate energy to build resistance to insects and disease and to produce the finest fruit and vegetables.*
March 13	***Building a Comfortable Home for Your Plants:*** *Soil health is the foundation for building a comfortable and inviting home for your plants. This spring, boost your soil health by optimizing incorporation of cover crops, following best practice planting techniques and providing supplemental nutrition to give your plants the healthy start they need.*

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Beyond the Harvest

(Continued from page 5)

fruit set and resistance to disease. At this stage, a tree needs nutrients, primarily phosphorus, which is typically not as available in cool, wet soils as the soil's microbial life is not awake yet. In order to make phosphorus more available, we recommend a foliar of PHT™ Phosphorus, Sea-Crop® and MicroPak™.

The blossoming stage begins with the opening of the first flower buds and lasts until the petal-fall stage, when about 75 percent of blossoms have fallen from the tree. During this stage, delicate blooms are particularly susceptible to damage from late spring frosts. Pollination is crucial during blossoming to ensure optimal production of well-formed fruit. Avoid using insecticides as they will kill beneficial pollinator insects. At this stage, growers should be focused on facilitating the tree's hormone shift, maximizing pollination strength, and preventing blossom drop. To promote strong pollination, we recommend a foliar of PHT™ Phosphorus, MicroPak™ and PhotoMag™.

Depending on the type of tree, fruit set typically occurs sometime between March and May, about 4 to 10 days after blossoms appear. In stone fruits such as peaches, cherries and plums, the outer shuck splits away from the base, exposing the small, developing fruit. During this stage, growers should focus on avoiding nutrient deficiency as the tree prepares to pour all its energy into fruit sizing and filling fruit. Proper level of balanced nutrition will prevent fruit abortion. At this stage, adequate levels of boron and potassium are necessary for translocation of sugars. Calcium builds strong cell walls while magnesium, phosphorus and trace minerals promote photosynthesis. We recommend a foliar of PHT™ Potassium, PHT™ Phosphorus, Sea-Crop® and MicroPak™.

During the fruit finishing stage, fruit ripens over the summer months until harvest time, typically about 60 to 150 days after blooming. Growers should focus on supplying adequate energy to the tree in order to facilitate optimal fruit flavor, storability and integrity. We recommend a foliar of PHT™ Potassium, PHT™ Phosphorus and PhotoMag™.

Finally, the most critical time to provide energy to your fruit trees is after harvest. This is the time when buds that will produce next year's fruit will form. Inadequate nutrient supply will result in limited bud formation and are the cause of "biennial production". John Kempf says that "all fruit trees are genetically programmed to produce every year if adequate resources are available." We recommend applying foliars until end of season consisting of PHT™ Phosphorus, PHT™ Potassium and MicroPak™.

Growing Quality Forages

(Continued from page 3)

Phosphorus is the most important nutrient to apply at seeding time. The use of phosphorus increases seedling vigor. Potassium stimulates nitrogen fixation in the plant and improves the ability of a young seedling to survive the winter. Since alfalfa produces its own nitrogen, nitrogen fertilizer application is not necessary and not recommended when establishing a crop. We know that a fully functioning biological soil and plant nutrient exchange will eliminate the need for supplemental nutrition.

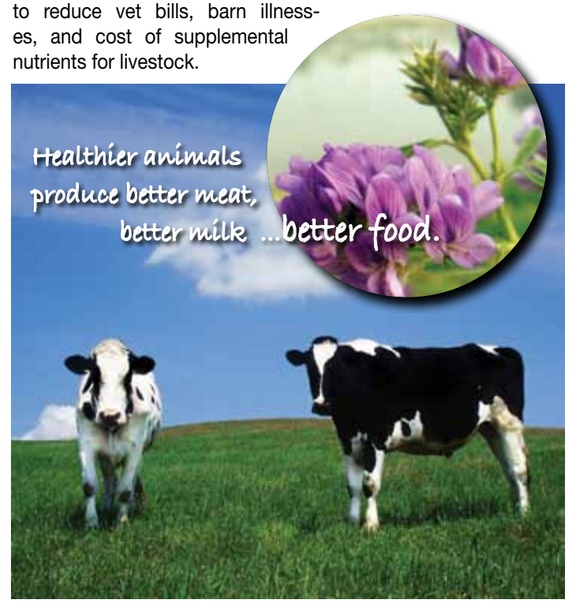
Seed Inoculation

Seed should be inoculated with an appropriate Rhizobium bacteria strain prior to seeding such as Bio-Coat Gold. Inoculation enhances nodule development and nitrogen availability. Three things you need to know about Rhizobia inoculants:

- Rhizobia in inoculants are a living organism with a lifespan. They should be stored in a cool, dry place.
- Inoculated seed should also be stored in a cool, dry place and seeded as soon as possible.
- Check your alfalfa crowns for nodules. The goal is to have clusters of large nodules around the crown area and lateral roots with pink to red insides. Creamy, white insides indicate immature nodules, and pale green insides indicates unhealthy nodules. The number of nodules and the rate of N-fixation peaks just before bloom.

Tissue sampling is helpful to identify any nutrient deficiency in a crop, but is particularly useful for micronutrients.

The importance of growing a quality, nutritious forage is to bring a proper diet to livestock. A diet of nutrient dense forage helps to reduce vet bills, barn illnesses, and cost of supplemental nutrients for livestock.



From Veronnika's Kitchen

by Veronnika Greanthum

Orange & Radish Salad with Arugala

(serves 6-8)

I'm happy to report that I am already harvesting beautiful radishes and sweet and spicy arugula from my garden. I ran across this recipe and thought it would be just perfect for this time of year. For a better orange salad recipe, follow these rules: for bold flavor, include lime juice in the dressing; allow the oranges to drain before tossing them with the other ingredients to eliminate excess juice; use just a small amount of greens; and toss the salad very gently to prevent the greens from bruising and the orange pieces from falling apart.

3 medium oranges *prepared according to illustrations below* to make 1 1/2 cups

5 teaspoons lime juice from 1 to 2 limes

1/4 teaspoon Dijon mustard

1/2 teaspoon ground coriander, toasted in small dry skillet until fragrant, about 30 seconds

1/8 teaspoon table salt

Ground black pepper

3 tablespoons vegetable oil

5 radishes, quartered lengthwise and cut crosswise into 1/8-inch-thick slices (about 1 1/3 cups)

4 ounces baby arugula (about 4 cups)

Instructions

Place orange pieces in nonreactive mesh strainer set over bowl; let stand to drain excess juice. Meanwhile, whisk lime juice, mustard, coriander, salt, and pepper to taste in large bowl until combined. Whisking constantly, gradually add oil.

Add oranges, radishes, and arugula to bowl and toss gently to combine. Divide arugula among individual plates, place a portion of oranges and radishes over arugula, and drizzle with any dressing in bowl; serve immediately.

Technique Tips Cutting Oranges

1. Cut thin slice from top and bottom, stand on end, and slice away rind and white pith.

2. Cut in half from end to end, remove stringy pith, cut each half into three wedges, and cut crosswise into 1/4-inch pieces.

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4551 Parks West Rd., Middlefield, OH 44062

Providing the Missing Link for Full Potential Agriculture

ADVANCING ECO-AGRICULTURE
2012 Field Day

See pg. 4 for details

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