

JUST FUELIN' AROUND

Volume 1, Issue 2

April - June 2008

Change, the Only Constant...

by Matt Rudolf



Event Calendar

Annual Member Meeting:

Saturday April 12th 1:00 to 3:00pm
@ West End Wine Bar, 450 W Franklin St, Chapel Hill

Fuel Making:

Tuesdays 5:30pm @ the Coop

Coop Tours:

Sundays 1:00pm @ the Coop
or by appointment for groups of 10 or more

Upcoming Events:

Quarterly Grease Appreciation Dinner

Saturday, May 24th 6:00 to 9:00pm @ the Mardi Gras, 6118 Farrington Rd., Chapel Hill

Burt's Bees Ecofest 08

Saturday April 19th All Day @ Bicentennial Plaza, Raleigh

13th Annual Piedmont Farm Tour

Saturday April 19th and Sunday April 20th 1:00 to 6:00pm

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Buddhists know that change is the only constant; members of Piedmont Biofuels were reminded of that recently when we saw the first price increase in the cost of retail biodiesel since the inception of Piedmont Biofuels in 2003. For a long time we believed that because we did not rely on light sweet crude as our feedstock, our cost was independent of the petroleum pricing market. What we did not realize is that although agricultural commodities such as chicken fat and soybean oil have not historically been tied to petroleum pricing, the biofuels industry has wed the price of fats and oils to the price of petroleum. In fact, the entire grains market is now tied to the price of petroleum. Corn is trading near its record-high price of \$5.70 a bushel, more than double the price of two years ago. Soybeans are hovering near \$13 a bushel, nearly double last year's level. Grains are at record highs because petroleum, that one commodity that rules all others, is getting more expensive as global supply



Matt Rudolf
Executive Director

decreases and demand increases and as soon as it is cheap enough to buy a biofuel grain feedstock and convert it into a biofuel for less than the cost of petroleum all of the feedstock is bought up by sleeping biodiesel and ethanol giants, ready to awaken their plants at a moments notice.

Agricultural commodity pricing has become tied to petroleum pricing, and unless petroleum prices fall, the price of biofuels feedstocks cannot. Because the primary feedstock for Piedmont Biofuels Industrial is chicken fat, whose price is tied to that of soy, the cost of production of our fuel at an Industrial scale has increased right along with the cost of petroleum, and that has led to the recent price jump at your local B100 pump.

What does this mean for Piedmont Biofuels and our members that want to use a cleaner burning, domestically produced biodiesel, and hoped to stay clear peak oil
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Presidential Brief

By Rachel Burton

In March, I had the pleasure of representing the coop at a Renewable Energy Educators Conference in Albany, New York. Matt Rudolf was originally scheduled for the talk but was in Canada working with the Canadian International Grains Institute. The organizers of the conference had billed Matt's talk as "Training Agricultural Producers In Small-Scale Biodiesel Production"- which is what Matt was doing in Canada, teaching Canadian farmers about biodiesel. I, on the other hand, have been more active in the recruiting of agricultural producers as opposed to the training of them. See, the week prior Leif, Lyle, and I embarked upon a "feedstock " tour across the Eastern part of North Carolina. Our feedstock tour was an attempt to bridge our biodiesel production efforts with agricultural producers in our state. Not only were we looking for new crop based feedstocks, we were open to new oil collection opportunities as well. We know that



Board Member Leif Forer in a field of North Carolina canola.

feedstock security is the name of the game for long-term success in localized sustainable biodiesel production. This is why, as the outgoing, president of the coop board, I would like to extend a request of each coop member that fuels up from the B100 Community Trail. My request to you, our cooperative members, is to actively seek and secure one new oil source for the coop's waste vegetable oil collection program this year. It does not matter whether it yields 20 gallons or 200 gallons a month- your outreach efforts are what matter the most. Right now is a very critical time for the success of our collective project- Can we really power ourselves? Can we stay true to our mission to bring clean, renewable biodiesel to our community in the Raleigh-Durham-Chapel Hill area? I believe the answer is "YES". Yes with everyone's help. Thanks for your continued support.

Rachel Burton—President, Coop Board

A Brand New Better CleanTech!

By Tim Angert

Education. Its a huge part of what Piedmont Biofuels Coop does. Not only do we have the public come to us for our free weekly Sunday tours, but we go to the public. We go out to numerous different events throughout the year to educate various groups of people, from students, to professionals. When we do this we use a mobile processor, you may know it as "Clean Tech". Over the years of life on the road Clean Tech began to look a bit worn around the edges. It was also beginning to have outdated technology. As our education sessions have become more in depth and our own personal knowledge has progressed we began to realize some of the shortcomings of the original design. Whenever it rained or snowed (though rare occasions in North Carolina) all of the equipment was exposed, as were we. It made it especially hard to plan for events, and presentations. The other thing that we didn't have was lights, so a presentation after dark was almost out of the question. But worst of all was the potential for us to leave a greasy mess anywhere we went if we had an accident. So the decision was made and to investigate the possibility of getting a new trailer to house the mobile reactor. A grant was found, paper work was downloaded, completed, and submitted, and we were awarded the grant. The grant provided us with the funding necessary to get not only a new enclosed trailer, but a new Seed Crusher. Both the trailer and the seed crusher arrived in February, since then we have been busy working on upgrading the new clean tech so that it is the "best" mobile biodiesel reactor on the east coast.

The first step of the upgrade was to



Equipment additions, an enhanced process, and protection from the elements all figure into the new CleanTech.

determine what aspects of biodiesel were important to educate people about. We decided that the carbon cycle of biodiesel, the ability to grow a oilseed crop (capturing carbon), crush it and process the oil into finished biodiesel which can then be burned (releasing the carbon) was extremely important. For the processor we decided that the ability to minimize waste streams, recover methanol, and do dry washing/polishing (using ion exchange resins) as well as safety were the major design concerns. All liquids in the new trailer will be in spill containment so there is no chance of us leaving a big puddle of goo behind, if... when we have an accident. A lot of work has gone into the upgrades. Special thanks to Doug Lepley for coming out and helping us with the electric, and work bench design. We are currently putting the finishing touches on the system. The next step in the upgrade process is getting the graphic wrap design finalized so that we have a moving educational billboard. See you on the road!

Event Calendar

Mobile Biofuels Workshop

Tuesday April 22nd 4:00 to 7:00pm @ Robeson Community College, Lumberton NC

Duke and UNC Earth Day Events

Tuesday April 22nd @ their respective campuses

Chapel Hill Earth Day event

Saturday April 26th @ Rosemary Street Parking deck in downtown Chapel Hill

Biofuels Open House

Friday May 9th All Day @ new Biofuels Center, Oxford, NC

On-Farm Biodiesel Workshop

Thursday May 29th @ Hillside Farm, PA

On-Farm Biodiesel Workshop

Saturday May 31st @ Penn State Cooperative Extension, State College PA

On-Farm Biodiesel Workshop

Tuesday June 3rd @ State Line Farm, Shaftsbury, VT

On-Farm Biodiesel Workshop

Thursday June 5th @ New Hampshire (Location TBA)

On-Farm Biodiesel Workshop

Wednesday June 11th @ Katadhin Log Homes, Oakfield, ME

On-Farm Biodiesel Workshop

Friday June 13th @ Monmouth, ME

Mobile Biofuels Workshop

Tuesday June 24th @ Durham Tech Community College, Durham, NC



Co-op Member of the Quarter

Dave Cunningham

The truth is we have seen very little of Dave over the past three months, so it might come as a bit of a surprise to have him named as the member of the quarter. We think it will be obvious when we tell his story why Dave deserves to be the first person to have this honor.

Dave is an exceedingly humble, yet talented person, and one of the hardest workers we have ever had at the coop. During his day job he designs and installs industrial boilers, of the size that might go into a public university's power station. On the weekends he works meticulously on his beloved mid-eighties S-10 diesel pick up. Dave is the only member who came out in 95-degree weather to help us dig the trench to bury the fuel line to the Tami tank. He is also the one who did most of the work installing the two elevated finish fuel tanks above the solar hot water reservoir, and the 15-gallon calibration vessel that sits beside them. His advice and contributions at the coop have been invaluable, and we owe much of our progress in fuel production to him. Dave even came to help out one day when he was in such serious back pain that he was on prescription pain medication, so his wife had to drive him to the coop to do his volunteer work, and she waited patiently in the car while we tried to convince him to go back home. Then one evening in late November, on his way home from the cooperative, a woman lost her brakes and sped into Dave's lane, totaling his truck. Dave has since been working on rebuilding his truck and hopes to be back on BI00 this spring. Dave, thank you for your humbleness and incredibly hard work, and for all that you have done for Piedmont.

Tuesday Night Fuelmaking - An Institution

By Ben Gillespie

Tuesday Night Fuel-making has become a tradition at the Co-op in the past few years. I started coming out to fuel-making while it was in its infancy back in May 2006. I had just joined the Co-op, and although I was happy to have biodiesel for the first time, I was looking for something cheaper, plus I thought it would be fun. I had experimented with mini-batches before in high school and at home, but decided that making my own fuel in meaningful quantities would be too much of a hassle. Hence I began coming out Tuesday nights.



Tuesday Night in full swing...

Back when I started coming out, Matt Rudolf had just become the Executive Director of the Co-op, and there were just a handful of people involved. Back then we were making fuel with lemon scented oil that titrated at 0.3. We washed it a time or two, and then put it into a 55 gallon drum later to be pumped by hand into our cars. Its been fun to watch things change over the years, namely the implementation of new technology, to help make higher quality fuel and to help automate things. Our base titration number has risen from 4.9 g KOH/Liter to 9 g KOH, and our oil now titrates in the 4-8 range. We've installed a coolant heater which helps to bring oil temperatures up higher. Glycerine pre-washing is used to eliminate a wash, and we now have a dedicated dry tank, which helps things get dry quicker. A purolite column helps our fuel to pass spec, which is then sent into one of two (130) gallon containers which is then pumped out either to the Tami- Tank or to homebrewers' cars. What was once a Tuesday night activity has turned into a week-long process that could not be done without the help of some very special people. I've seen people come and go over the past two years, but the ones I will always remember are our interns. We've had multiple Emily's, a Greg and a Caleb, and others who were involved with projects other than fuel making. They are the ones that get things ready for Tuesday nights, and help throughout the week to finish up the fuel we make. And they are great people to make fuel with.

Businesses and Organizations that provide Used Oil to our Coop:

New Customers in GREEN

Pittsboro:

Carolina Brewery
Plaza Mexico Lindo
Piggly Wiggly
Our Neighborhood School
Cambridge Hills Assisted Living

Greensboro:

Elizabeth's Pizza
Print Works Bistro
Guilford College
UNC-Greensboro

Durham:

Kim Son
Six Plates Wine Bar
The Wing Stop-MLK Pkwy & Southgate
Thai Cafe
Burt's Bees
Duke Business School
IBM Cafeteria

Raleigh:

Poole's Diner
Tyler's Tap Room
Blue Ridge-The Museum Restaurant
North Carolina State University

Cary:

Chick-Fil-A

Wayne County:

Wayne County Landfill Recycling

As you go out of your way to patronize those businesses that make their used cooking oil available so that we (or you!) can make it into fuel for your ride, please remember to **THANK THEM.**



February's Grease Appreciation Dinner was not only a good time, but it helped us get the Carolina Brewery account in Pittsboro!



Piedmont Biofuels Quarterly Grease Appreciation Dinner

May 24th, 6:00pm - 9:00pm at Mardi Gras in Chapel Hill

As grease collectors, we feel that locations that recycle their grease with us deserve a big "thank you" from us and our membership. As coop members and employees, we're tired of working all day and never taking a night off to enjoy the very restaurants that we collect grease from. So, we thought that a dinner for the employees and members of Piedmont Biofuels at one of grease collection locations would be a perfect fit. So come on out to the Mardi Gras Bowling Center in Chapel Hill so we can have a good time and thank Mardi Gras for the hundreds of gallons of their oil that we've made into biodiesel. Last quarter's Grease Appreciation Dinner at the Carolina Brewery was not only a good time, but it helped us land the grease collection account at their sister location in Pittsboro! So come on out and roll a few frames, eat some fried food, and thank one of the businesses whose used fryer grease fills your ride with renewable fuel. We'll send out a reminder email just prior to the event. **See You There!**



Change ...

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by weaning themselves off petroleum ahead of time?

It does not mean that we are not achieving our goals. Biodiesel is still a renewable fuel that has lower greenhouse gas emissions, promotes local economies, has a positive net energy balance, and is non-toxic and biodegradable. It does mean that we are going to have to work hard to extricate ourselves from the volatile commodities market and to secure our own feedstock sources such as waste vegetable oil or by growing our own oilseed crops. WVO collection was in our plans anyway, for important sustainability reasons, and we are working hard to expand our oil collection business. Currently we collect just over 2,000 gallons of usable fryer oil per month, which accounts for about 20% of the fuel used on the local B100 Tank Trail. We kindly ask those members that want to help out and would like to continue to use locally produced biodiesel to help us



The "like new" pumper truck purchased by the coop to help increase our grease collection.

expand our oil collection. Speaking with the hundreds of triangle restaurants about switching to our grease collection service is a massive job and by encouraging a restaurant that you frequent to switch to us you can help us get to a more environmentally and economically sound feedstock source.

The Community Tank Trail is one of

the most important parts of the Piedmont Biofuels project, and we operate it despite the massive amount of logistical work it requires, because of a deep love of the notion that we can provide for our community an alternative to petroleum. Many of you have paid a premium to use biodiesel for many years and we are grateful for your dedication and support. In return, we have never raised our price, because our intention was always to provide the fuel at a fair price to those individuals who wanted to use something that is better for the environment and has no war required. We will continue to offer fuel through the trail at the best possible price we can provide without losing money while continuing to quickly expand the scope of our used fryer oil collections. Finally, as Energy Blog recently reminded us, the best thing you can do is walk or bike more often, because energy conservation will always be the most important way to contribute.

Piedmont Biofuels is a worker and member owned cooperative. Our mission is to lead the grassroots sustainability movement in North Carolina by using and encouraging the use of clean, renewable biofuels. We are involved in a wide variety of undertakings in support of this mission:

- We provide pure, WVO based biodiesel (B100) to the community.
- We maintain a top quality biodiesel plant where worker-members can make their own fuel from locally collected waste vegetable oil.
- We have a farm incubator where we provide land for a local farmer to run a market garden for wholesale and sale at our local farmer's market.
- We do education and outreach on both biodiesel and engine modifications that enable people to use straight vegetable oil (SVO) as fuel.
- We lobby the North Carolina legislature, as well as our national representatives, on behalf of biodiesel and alternative fuels.
- We have an intern program that allows people to live on site and learn about all facets of our operations..



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