



## Oilseed Producer Meeting Minutes

Comfort Inn, Berlin, Vermont February 2, 2010

Heather Darby, UVM Extension Agronomist and Nutrient Management Specialist welcomes the group of oilseed producers and other interested groups and individuals to share information on growing oilseeds from the past season, and plans for the coming season.

Larry Scott, Newbury, 5 years growing crops, 30 acres sunflowers, did really well this year. 1300 bushels total for 30 acres, bird damage, bear like sunflowers, some white mold, first year they have seen white mold on their farm, on lower meadow that floods every year, going to have to practice a longer rotation than originally anticipated, soybeans year before, corn for 100 years, conventional production. Heather said that at least every field they had been in this year has had white mold. At first observation Heather thought that the increased amount of white mold occurrence had to do with poor rotations, but after reading more about white mold, it said white mold can occur when sunflowers have never been grown before. There are over 400 hosts of white mold, really wet out, and the conditions are right, if there are overwintering structures of the white mold and they germinated, even if it was the field right next to yours, they can blow in from several miles. Larry now has an Oilseed press tabby double press (\$14,700) press will be up and running this week. It will process about 1500 lbs per day. We had gotten a grant from VSJF for press and trials. The trials were on 2<sup>nd</sup> year of sunflower had lots of volunteer sunflowers, test plot didn't come out so good, will do it again next year but will replicate it. Sunflower yields are measured by volume in bins, 1300 bushels. Both bins have drying floors used to dry – 13-16% moisture when harvested. Last week of October sunflowers were harvested. The sunflowers are at 6% moisture at this time. Perhaps the seed is a bit too dry for pressing. According to some sources the optimal moisture for pressing is between 8-12% moisture. John Williamson from Stateline Biofuels in Brattleboro, VT argued that the dryer the better. He felt that with his press, 6% moisture was ideal. He went further to say that he felt oil yield was higher still when the sunflowers were at a cool temperature, 50-55° F. Larry Scott's variety was Defender Plus worked well on his farm. Weed control – Prowl pre-emergence (1qt/acre) similar weeds to corn pigweeds, lambsquarter, crabgrass another weed is volunteer canolas. Sunflower planted May 12 and combined last week of October. Seeding rates 30,000 plants per acre. International 400 cyclone 6-row planter – need bigger seeds. Would like to plant 40 acres in the future. Need larger seed so we can use the same planter. Planter size 3 last year, need size 2 or 1. If you do not specify with the company they will send you size 3. Wants a sunflower drum for the planter.

Stan Lasall, Williamstown, canola for 3 years, first 2 years broadcast seeded with hand seeder with crank. 7lbs to the acre. First year good stand, harvested by hand with scythe and trailer, put into garage set there for 1 year. Bought a stationary combine. Haven't pressed them yet. Planted second year, and third year plowed 3 acre parcel. Two acre yield of canola, middle of June, harvested at end of October,

half dozen bags of seed. Third year got them in middle of June, harvested them end of October, yield not good but we have a 1952 McCormick pull behind combine, son has 1962 self-propelled. Needs help with combine adjustments. Someone at the farm show said he should have 2 ton yield, perhaps it is too windy and the seed is blowing out. He thinks there is not enough wind and the seed is falling straight through to the ground. Not sure what is happening but hopefully he'll learn. Larry Scott noted that it took 2 rolls of duck tape to plug the holes in his combine when he did canola. Heather thought that perhaps he is harvesting the canola too late. The pods are dry and they shatter upon contact when they are over ripe, he might just be losing the canola on the ground. Stan said he can very well stand behind the combine to see what is going wrong while he's driving the tractor. Heather commented sarcastically, "You can't?" Stan said, "well it's hard to do, I haven't developed enough of a split personality". Hopefully this self propelled combine will do the trick for me. Paul Bovin mentioned that you can put a sheet behind to see the seed on the ground, so you can tell what you are losing.

Nick Cowles, Shelburne Orchards, apple growers, two 5 acre fields, keep planting buckwheat year after year. Rototilled buckwheat under and keeps coming back, has a seeder, harrows, and need combine –

Jon Satz, Woods Market Garden in Brandon. fruit and veggie growing, first year of oilseeds, planted 7 acres of sunflowers and one acre of soybeans. Not certified land raised organically from a fertilizer and cultivation standpoint, had been corn the last 5 years. Sunflowers did decent, some bird damage, about 10% bird damage happened over a course of a day or two when the birds decided that that was the field they were going to visit. 6 ton off the 7 acre piece. Would have been a ton/acre but there were culverts and drainage issues, spots of the field that were oversaturated. Weed control – collaborated with VSJF work on cultivation efficiency. Has a lot of 2 row cultivation equipment for his vegetable business. The VSJF helped him acquire a 6 row cultivators to deal a little more efficiently – kovar tinweeder, preemergence, 5 days after planting, went over and scratched it pretty aggressively. Came back 3 more times with tinweeder, quick unit just go as fast as your tractor can go. Didn't take much time to cultivate the 7 acre field. Used a Danish tine cultivator, once slow, once moderate speed, last time was the last chance to get in the field so he wouldn't knock them over, just wanted to hill them up a bit. Planted June 4<sup>th</sup> or so and planted Defender HO untreated seed, harvested day before Thanksgiving. This year grow sunflowers maybe 10 acres. 6-row Kinze planter with sunflower fingers. Fertilizer 1200 lbs per acre of pelletized 5-4-3. Will also sell oil as cooking oil bulk at the farmstand.

The group started talking on the side about fertility, [specifically nitrogen requirements of sunflowers](#). Heather warned the group that excess Nitrogen is the main reason for lodging of sunflowers. Too much nitrogen makes the sunflowers tall, with weak stems. Vermont has a history of well fertilized, cow manured fields. Andrew from Clearbrook farm has had a heck of a time with lodging and the first thought was the sunflower maggot, but Heather thinks it is too much Nitrogen. Brad Lawes asked about potassium levels, but Heather said potassium would not contribute to weak stems as much as nitrogen. Jon Satz and Brad Lawes did not have a problem with lodging, but their fields were low in fertility. Jon's field had been silage corn in the past but it had not received any manure. Brad's field was sandy and the soil tests and PSNT results came back requiring additional nitrogen. Field up in Alburgh, where the research plots are planted was right next to the barn had lodging problems, but a field down the road with low fertility grew the best sunflowers. Jon Satz had mentioned he was going to rotate his

sunflowers into his vegetable land and Heather warned him that if the field is high in fertility, lodging may be a problem. In South Dakota when soil testing sunflower fields, they probe down 2-3 feet because sunflowers are such good scavengers, and they perform a fall nitrate test. Researchers in South Dakota said that sunflower maggots are not responsible for lodging. Fields have had 30-40 maggot tunnels per plant and have been able to withstand lodging. Jon Williamson attested to Heather's observation. He described a field he rents from his neighbors where the corner of it had had a pig pen for many years. The field was in good standing except in that corner where all the plants had lodged. Brad Lawes saw a nitrogen response on his sandy field with low fertility. He side dressed 4 different sections of the field with 50, 75 & 100 pounds of nitrogen and saw the greatest yield response with the highest application rate. In addition there was less than 5% lodging. The field had been corn 2 years prior and had not received manure. Heather stated that she was not telling the producers to not fertilize their fields, but to consider the field history, soil type, and soil test levels before applying nitrogen in order to minimize lodging.

Brad Lawes, sunflower fingers for kinze planter. Brad put in 44 acres – harvest 40 acres, one 4 acres piece lost to birds. We had seven fields, one next to river, and had very little damage. Mostly, had people stealing sunflowers. I had people calling from all over – even Mass. Of all acres average 1475 lbs per acre. All the seed in bins, Bill Mordasky will start processing the oil and meal. Meal for greenhouse or fertilizer or livestock feed. Person in area making pellets. We have about 30 tons of sunflowers in bins. Planted 24,000 plants/ acre and harvested at 18,000 plants/ acre. Wants to plant 50 acres of sunflowers next year. Soybeans were at 90 acres this year and many issues. Only got half a crop. Will start some rotations. Jon wants to install a biomass burner for his larger greenhouse. Still discussing what would be more valuable, the meal as feed or fuel. John Williamson said that there is more valuable as feed. Roger attested to the feed value, which he sells for \$600/ton, he said that people who raise rabbits, goats and horses love it. He is also selling oil to soap makers. Niches help to make it profitable. For weed control Brad used prowl and dual pre emergence. The fields were already clean to start with. Best yielding variety was Dekalb variety 61-31 – variety name may change because Northrup King has bought the entire Monsanto sunflower seed line – wants larger seed need to go in on an order because they sell out quickly. Didn't see too much difference with varying seeding rates. 24-26,000 for seeding rate seemed to be the best. Biggest difference was in the different fertility program. For fertilizer he broadcast 200 lbs high K Mg S, also planted pop up fertilizer direct seed contact, which he knew wasn't recommended because sunflowers are so sensitive to fertilizer burn, but the side by side comparison didn't show any response from the pop up fertilizer. Harvested 13 – 15% moisture.

Brad burns about 35,000 gallons of diesel fuel per year. Wants to subsidize fuel usage with this for his company. 3-4000 gallons of oil. Run through combine again to clean seed better.

Alan Baker – helping the Williamsons with agronomy aspects and data collection. Alan has helped informally with many crop items. Weak spot is data collection, Alan can help with data collection, items to try, and work with crop production.

John Williamson, State line farm, started 6 years ago, one field of canola, first attempt. Since built a biobarn with oil mill tabby press, biodiesel reactor, most components are in place, few wash systems. Finish up ethanol recovery system. Will have capacity to produce 400 gallon batches at one time. Parts of system that are weak – storage and drying bins – only have 1500 bushel capacity which we need to increase – more farms that have joined up to 5 farms at the moment. Need to beef up capacity. Seed trials for a few years and have grown many crops over the years. 40 acres of sunflowers this season. Terrible yields, worst year ever. We need to start concentrating on how to grow these crops really well. Need to nail down the agronomics. Information we are getting back is weak. Deer are a real threat lost over half of the crop to deer. .. People are a real threat too. Got so sick of people asking if they could cut the sunflowers he started telling people they would be \$10 each. Need to look at all oilseed crops – camelina, pennycress, crambe and figure out how to grow these well.

10 acres of canola and mustard – mustard did well, canola eaten by birds, sunflowers eaten by deer. Really disappointed by the yield.

90-100 acres between 4 farms. We have winter canola, pennycress planted this fall. Cover crop all fields. Weed control with herbicides and was a disaster. Cultivate does work very well and sunflowers respond. Harvest: (Andrew Knafel partner in the biofuels venture) purchased combine John Deere 4 wheel drive machine 4420 with a sunflower head. Need other heads, swather would be nice to try. Still working on feasibility on all this but with crop failures it makes the bottom line look bad. Put in scales so we could start weighing and gathering more data. John growing sugar crops to make ethanol.

Nick Meyer – North Hardwick Dairy, Certified Organic. 10 acre of sunflowers last season, planted late May 17<sup>th</sup>, harvested in November 18<sup>th</sup>. Grant money was spent on a press – Kern Kraft – came a few weeks ago. Cultivation – 4 row billion, 3x, first two passes took off front tines, put back on later and went faster the last time through. Deer near the woods and bird damage – 25 – 30% of yield loss. Rotation, one field peas & oats, the other plowed down sod, no difference. Manure in one section, wood ash in the other. How did you harvest? – with a JD 3300, we have a three row corn head and golden plains sunstar sunflower plates. The plates were \$1200. Golden Plains makes plates for CASE and John Deere – 700-800 lbs per acre. Neighbor wants to grow 15 acres and Nick will do 20 acres (working together). Meyers will plant, combine, and store & press. Different next year, want a tinweeder. Grew Teton. Moisture 36%, first harvest waited and they dried down a bit made harvesting easier. Stored in bin, now moisture is 11%.

Dorn Cox, Lee NH, has is own operation, working with 10 other farms. This was an equipment year for the farm. Setting up quite a few different things. His acreage was really low this year but as a group did much more with grains. They are around 150 acres. We have 7 combines (2 Gleaner K-2, pull types, and international). Small plots of grain and oilseeds. Want to add another K-2. JD with a cleaner, Allis-Chalmers All-Crop pull type combine worked really well for grains. Most of his work this year was trying the roller-crimper, no-till set-up in 2 acres –grew Defender. John Deere no-till planter adjusted for sunflowers – winter rye September 20<sup>th</sup>, 150 lbs/acre, rolled June 13<sup>th</sup>. Crimper worked great and had a really heavy stand of rye. Yield data wasn't the best but weed suppression was great. The issues were skips, rained quite a bit the morning of planting, but were still able to get on the field. Late harvesting,

bigger heads, very wet, very little bird damage until right before harvested. We lost 40% of the crop in 2 days. 1200 lbs total for the 2 acres. 5 acres of soybeans, 5 acres winter canola (drilled). Deer problems used electric fence. Want some non GMO canola. Packed down path from people walking in field to take pictures. Kodak moment box for donations. Will include vetch this season, different winter rye such as Aroostook rye, found more than double biomass and faster emergence in fall. Feed mill equipment that the group is working on, Kelly Duplex feed milling system that UNH had, hammermill, vertical horizontal mixers, roller mill, hammer mill. For feed processing. Buhler seed cleaner is our next purchase. Setting up a single pass system for planting. Focusing on crops and less on fuel at this point because biodiesel is available locally. Mobile Oilseed press set-up with direct drive off 13 hp diesel engine, needed to put in reverser gear box, set up on trailer to be mobile is now coming together. Low-till, and no till establishment of cover crop. Soil type is Scantic sandy loam.

Paul Boivin – No-Mon-Ne-Farm – Vermont Golden Harvest Biofuels, lots of rain, 200 acres of soybean, 200 acre of corn but did not materialize, part of SARE grant project with strip tillage and precision guidance system. Due to the weather and tech issues, we were unable to use the strip tiller. Had a delay on the project. Guidance system is very interesting technology and need to work out kinks, don't go run out and buy. Start drifting off a foot to foot in a half. Brought in a RTK unit remote beacon triangulates between satellites and stationary beacon and with this have been able to get precision with a few inches. Guidance system is important for strip tillage system. Soybean yields ranged from 10 bushels per acre for soybeans to as high as 65 bushels per acre– Chemgro is the best performer. Pioneer doesn't work that well. Canola not planted – 5 -10 acres for sale of non-GMO seed from last year.

Roger Rainville – hosts research plots – 7<sup>th</sup> year - 13 acres sunflowers 1300 lbs, no bird damage. Planted may 28<sup>th</sup>. Used a 4 row John Deere 7000 size three seed. First time we harvest – 36% moisture – did not work so well. When harvested 15-13% moisture had more success. Small heads dried down faster, do not have wet meal from large heads. Thinks more success can be achieved with higher seeding rates to get smaller heads that dry down faster and earlier. We are storing in a bin with a floor (1600 bushels) with a fan with air. Put in bags with aerators didn't work so well. Don't dry well when wet. Purchased a new Biofuel system which is fully automated with grant money from VSJF. All set to make biodiesel but were informed from the manufacturer's technician that the oil needed to be degummed first.

Barclay Jackson - Curriculum for middle school students – developed in NH. Working with Dorn and his group of farmers to develop the farmer cooperative – and energy independence.

Rosalie Madden – works with Heather and is in charge of the HOPS end product development.

Philip Halteman- works with Heather and is in charge of developing the Oilseed Production Guide.

Chris Callahan, Callahan Engineering, provides technical assistance through Vermont Sustainable Jobs Fund & UVM Extension. Working on Feed stock and feed quality best practices for on farm biofuels particularly for Vermont. Enterprise budget worksheets, Mike Dolts from UVM Extension has put together. Two main components, one is accounting of previous year of operation and the other is ability to project or forecast account expenses, revenues, and therefore profits if you are lucky enough to pull seed off a field. Mike put these together. Sheet that handles actual cost from previous year. Break it up

by crops (ie sunflower and canola). Lists, yields, what was harvested, what was processed. Soil testing, field prep, trucking storage, harvest, interest. Cash costs, for service or materials, depreciation, fixed costs. After a bit more tweaking, Excel sheets will be made available to producers.

Netaka White from VSJF gives an update on oilseeds projects. Also will give update on other projects VSJF has provided funding for to give sense of the larger network, to develop biofuels in VT, so citizens of Vermont can benefit from our resourcefulness. Generate dollars for our state and to stay in our state. Funding through Department of Energy. Education outreach, technical assistance. UVM & VTC are developing biofuels courses. Students are going to farms and different businesses in Vermont. Oilseed research UVM Extension, Heather Darby and Team. Build body of knowledge. Pelletized grass crops for fuel, tested in a facility for emissions and performance. Does it make sense from a combustion and performance standpoint. Stateline biofuels & Borderview have significant number of people going through. Oilseed producers, variety trial, agronomic practices, oil presses, to measure oil production oil yield tests. Algae Farming for Biofuel feed stocks is another aspect of research funded by VSJF. High oil algae has the potential to produce multiple crops in a season on a smaller footprint than traditional crops.

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