



Alternative Energy Production and Utilization on Farms Workshop

Tuesday, May 7 through Thursday, May 9, 2013

Carver Farm 3804 Bald Hill Road, Jefferson City, Missouri

Tuesday, May 7, 2013		
Time	Topic	Speaker
8:00-9:00	Registration	
9:00-9:10	Welcome	Dr. John Yang, Interim Head of the Department of Agriculture and Environmental Sciences
9:10-9:30	USDA/SARE program	Dr. K.B. Paul (LU)
9:30-9:45	Introduction	Dr. H. El-Mashad (LU) and Mr. B. Broz (MU)
9:45-10:45	Principles of biogas production	Mr. Charles Gould
10:45-11:00	Break	
11:00-12:00	Small digester design	Mr. Charles Gould
12:00-1:00	Lunch	
1:00-1:30	On farm anaerobic digestions, for energy or manure management?	Dr. T. Lim (MU)
1:30-2:15	Making the case for solar energy, energy efficiency and conservation for big money savings	Vaughn X. Prost, Missouri Solar Applications
2:15-3:00	Sizing a solar system	Mr. D. Day (MU)
3:00-3:15	Break	
3:15-4:30	Integrated aquaculture systems yielding algal-derived biomethane, biofertilizer and biodiesel	Dr. D. Brune
4:30-5:00	Air Pollution Control Program Permits Section	K. Hale (DNR)
5:00-6:00	Dinner	
6:00-6:45	Economics of biogas and solar energy systems	Dr. H. Gedikoglu (LU)
6:45-7:00	Bioenergy on line curriculum	Mr. D. Day (MU)
7:00-8:00	Wind power physics and basics	Mr. F. John Hay

Wednesday, May 8, 2013		
Time	Topic	Speaker
8:00-8:45	Travel to MU Bradford and South Farm Research and Extension Centers	
8:45-9:30	Algae and Tilapia demonstration	Dr. D. Brune
9:30-10:00	Biomass burner	Dr. T. Reinbott
10:00-10:15	Break	
10:15-10:45	Compost and biodiesel	Dr. T. Reinbott
10:45-11:30	Solar greenhouse and solar fencing	Dr. T. Reinbott
11:30-12:30	Lunch	
12:30-1:30	Tour at MU digester	Dr. T. Lim (MU)
1:30-2:15	Drive to LU	
2:15-3:00	Characterization and supply of bioenergy production feedstock	Dr. R. Bayan (LU)
3:00- 3:30	Solar energy application on Busby farm	Mr. C. Boeckmann (LU)
3:30-3:45	Break	
3:45- 4:15	Grid tied photovoltaic system	Mr. R. Atkinson
4:15-5:00	Basics of solar heating systems	Dr. El-Dweik (LU)
5:00-6:00	Dinner	
6:00– 7:00	Example of application of solar energy systems on farms	Dr. W. L. Ambrose
7:00-8:0	Panel discussion	
Thursday, May 9, 2013		
Time	Topic	Speaker
8:30-8:45	Travel to Busby Farm	
8:45-9:30	Solar water pumping system on Busby farm	Mr. Chris Boeckmann (LU)
9:30-10:0	Vermicompost system heated with solar energy	Dr. H. Johnson (LU)
10:0-10:15	Travel to LU	
10:15-12:00	Demonstration and hands-on training on anaerobic digester and solar energy	Drs. M. El-Dweik and H. El-Mashad (LU)
12:0-1:0	Lunch	
1:00-1:30	Demonstration of a small scale biomass pyrolyzer	Dr. R. Bayan (LU)
1:30- 2:30	Post-workshop survey and wrap up	
2:30	Adjourn	