

# ACREC NEWS

The newsletter of the Clemson University Animal Co-Products Research and Education Center

Volume 2, Number 1

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## Research Directions

Next week, the Spring 2008 Request for Proposals (RFP) will be submitted to the faculty researchers of the Clemson University Animal Co-Products Research and Education Center. In this RFP, we will list research priority areas as provided to us by our membership. From this, our researchers will develop research project proposals. We will send your priority needs to our faculty and test their creativity and knowledge to find solutions. Those projects which are selected for funding will commence July 1, 2008 and, thus, will begin our third year of funding under the Clemson University/FPRF agreement.

During the round table discussion held in Miami on October 23, 2007 and via e-mail and phone calls, members of the Fats and Proteins Research Foundation have relayed research needs for the industry. Suggested project ideas include:

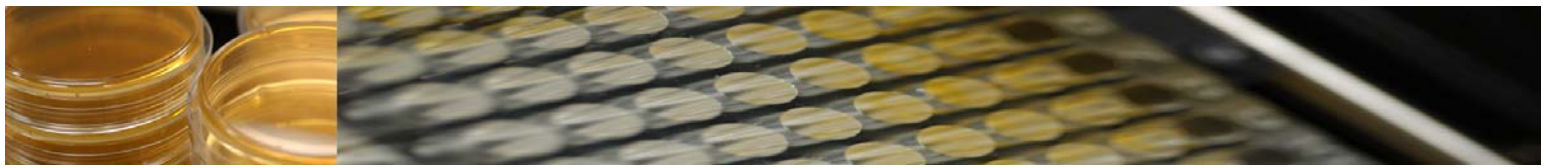
- The animal production industry needs a biosecure way to handle and transport carcasses during emergency “animal depopulation” in case of disease outbreaks. The industry would like to have a biosecure method to wrap dead animals in secure films (made from animal co-products), to disinfect the outside of the vehicle, and to transport the cargo in a biosecure manner to the rendering plant. Once at the plant, the material would be deposited into the cooker in a biosecure manner while still sealed in the films. It will subsequently be cooked to destroy disease causing entities. If the polymer surrounding the animals is made of rendering materials, there would be no problems with plastics or other materials introduced into the cooker.
- The industry is interested in applications for polymers made from rendered animal proteins. Once the animal co-product plastics are perfected, the industry is very interested in targeting uses in a large scale industry such as the automotive or construction industries. It was suggested that the polymer chemists investigate applications for comparable corn and soy products as developed by major polymer corporations such as Dupont or Cargill. An interesting application suggested was for plastic bullets.

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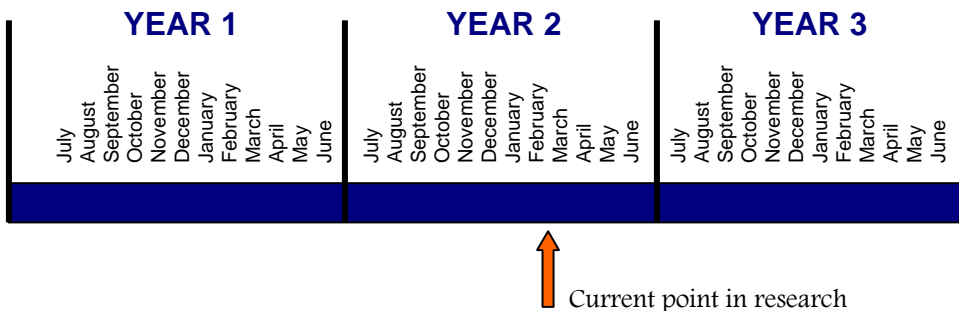


**Where do we go next?**

**Please help us map the research directions that are most needed in the next year.**



## ACREC/FPRF Agreement Timeline



### Research Directions *(continued from Page 1)*

Other suggested project ideas include:

- The rendering industry is interested in methods of reducing free fatty acid (FFA) levels in rendered animal fats. From the standpoint of biodiesel production, one of the biggest challenges in the rendering industry is that much of the biodiesel production infrastructure is set up for soybean oil which has a very low FFA. Many biodiesel plants will not accept rendered fats due to the higher FFA level (approximately 10%). The industry needs inexpensive ways to convert and/or reduce FFA levels. The industry also is interested in new uses for free fatty acids.
- The animal production industry needs a review of the carbon footprint starting from the pick up of raw material through the manufacture of finished rendered products including feeds and biofuels.
- The industry needs to know the differences in the denature stage of rendered protein meals as related to different processing procedures/conditions. This information would be beneficial for researchers studying plastic manufacture.
- The industry needs models to validate to environmental regulatory agencies that rendering is the preferred technology for disposing of animal carcasses and tissues in the event of natural disasters, disease mortalities and animal depopulation activities resulting from disease outbreaks.
- The industry needs to have models developed for EPA issues using telemetry data for odor, particulate, wastewater discharges, etc.
- The industry needs validation of thermal destruction for emerging disease issues.

Your input for non-feed, non-food research needs and wants is imperative for the Center to address the rendering industry's research priorities! What research is needed to continue increasing the competitiveness of animal co-products to plant-based fats and proteins?

Please e-mail your research topics, needs, priorities and ideas to Annel Greene at [agreene@clemson.edu](mailto:agreene@clemson.edu) or [acrec-L@clemson.edu](mailto:acrec-L@clemson.edu) by Friday, February 15, 2008 so we may include these in the upcoming RFP.



Dr. Amod Ogale and his team are investigating ways to create new geostructural polymers from animal co-products. His team has been successful in creating a variety of new plastics using melt-processing to extrude and mold feathermeal into sheets. The team has studied use of plasticizer agents such as glycerol as a softening agent. The preliminary results of the study indicate that large geostructural sheets of plastics may be made. Potential uses for such materials could include reinforcements for temporary roads or as erosion control fencing during construction projects. Using this biodegradable sheet material, water can permeate through reinforcement materials. Upon biodegradation, the materials would yield simply fertilizing materials.

### Upcoming Events

ACREC Research Committee Meeting  
 Monday, March 31, 2008  
 1:00 pm to 5:00 pm  
 and  
 Tuesday, April 1, 2008  
 9:00 am to noon  
 ACREC Conference Room  
 Room D-236 Poole Agricultural Center  
 Clemson University



ACREC Governing Board Meeting  
 Tuesday, April 1, 2008  
 1:00 pm – 5:30 pm  
 ACREC Conference Room  
 Room D-236 Poole Agricultural Center  
 Clemson University



**Animal Co-Products**  
 Research & Education Center  
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#### Research Committee – Spring 2008

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 Mr. David Kirstein, Vice-Chair  
 Dr. Sergio Nates, Secretary  
 Mr. Gerald "JJ" Smith  
 Dr. James G. Goodwin, Jr.  
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 Dr. Annel K. Greene

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