ASI Publications and Presentations
2012-2013

Giovanna Aita

Refereed Scientific Articles

*= corresponding author, "= graduate student, #= post -doctoral fellow.

1. Cao, S.", **Aita, G**.* (2013) Enzymatic Hydrolysis and Ethanol Yields of Combined Surfactant and Dilute Ammonia Treated Sugarcane Bagasse. Bioresource Technology. 131: 357–364.

2. Qiu, Z.", **Aita, G**.* (2013) Pretreatment of Energy Cane Bagasse with Recycled Ionic Liquid for Enzymatic Saccharification. Bioresource Technology. http://dx.doi.org/10.1016/j.biortech.2012.11.062.

3. Moreno, R.", **Aita, G**.*, Madsen, L., Gutierrez, D., Yao, S., Hulburt, B., Brashear, S. (2012) Identification of Naturally Isolated Southern Louisiana's Algal Strains and the Effect of Higher CO_2 Content on Fatty Acid Profiles for Biodiesel Production. Journal of Chemical Technology and Biotechnology. DOI 10.1002/jctb.3930.

4. Qiu, Z.", **Aita, G.***, Walker, M. (2012). Effect of Ionic Liquid Pretreatment on the Chemical Composition, Structure and Enzymatic Hydrolysis of Energy Cane Bagasse. Bioresource Technology. 117:251-256.

5. Chen, C.", **Aita, G.***, Boldor, D., Walker, M. (2012). Ethanol Production from Sorghum by a Microwave-Assisted Dilute Ammonia Pretreatment. Bioresource Technology. 110:190-7.

Refereed Scientific Articles (accepted)

1. Han, K. J., Pitman, W., Alison, M. W., McCormick, M. E., Kim, M., Day, D. F., **Aita, G**. (2013) Evaluation of Sweet Sorghum Ethanol Production Potential Using Chemical Composition Analysis and Fermentation Gas Measures. Global Change Biology Bioenergy Journal.

2. Kanitkar, A.", **Aita, G**. * (2013) Recovery of Polymerization Grade Aconitic Acid from Cane Molasses. Journal of Chemical Technology and Biotechnology.

Refereed Scientific Articles (submitted for publication)

1. Chen, C.", **Aita, G**., Boldor, D., Walker, M. (2013) Effect of Non-Ionic Surfactant on Microwave-Assisted Sorghum Biomass Pretreatment Process. Biomass and Bioenergy (*In Review*).

2. Qiu, Z.", Aita, G.*, Mahalaxmi, S. (2013). Optimization of Processing Conditions for the Ionic Liquid Pretreatment of Energy Cane Bagasse by Response Surface Methodology. Bioresource Technology (*In Review*).

Refereed Scientific Articles (in preparation)

1. Dorman, D., Madsen, L., **Aita, G**. (2013) Biodegradable Photolithographic Matrices Synthesized from Glycerol, Citric Acid and Cinnamic Acid: A Study of Hydrophobicity due to Free Hydroxyls and Cinnamic Acid content. Macromolecules.

Abstracts/Oral Presentations

1. Soladi, S.", **Aita, G**.*, Mahalaxmi, S. (2013) Effect of Water Pretreatment on the Biomass Structure and Enzymatic Hydrolysis Yields of Sweet Sorghum Bagasse. 35th Symposium on Biotechnology for Fuels and Chemicals, Portland, OR.

2. Qiu, Z.", **Aita, G**.*, Mahalaxmi, S. (2013) Optimization of processing conditions for the ionic liquid pretreatment of energy cane bagasse by response surface methodology. 35th Symposium on Biotechnology for Fuels and Chemicals, Portland, OR.

3. Kanitkar, A.", **Aita, G**.*, Mahalaxmi, S. (2013) Synthesis and Characterization of Biocompatible Polyesters of Citric Acid, Cinnamic Acid and Glycerol. 35th Symposium on Biotechnology for Fuels and Chemicals, Portland, OR.

4. Kanitkar, A.", **Aita, G**.*, Madsen, L. (2012) Isolation of Aconitic Acid from Molasses Using Ethyl Acetate for the Production of Polyesters. 34th Symposium on Biotechnology for Fuels and Chemicals, New Orleans, LA.

5. Qui, Z. , **Aita, G**.* (2012) Effect of Ionic Liquid Pretreatment on the Structure, Enzymatic Hydrolysis and Fermentation of Energy Cane Bagasse. 34th Symposium on Biotechnology for Fuels and Chemicals, New Orleans, LA.

6. Cao, S., **Aita, G**.* (2012) Effect of Tween 80 on the Pretreatment of Sugarcane Bagasse with Dilute Ammonia. 34th Symposium on Biotechnology for Fuels and Chemicals, New Orleans, LA.

Popular Articles

1. **Aita G.*** (2012) Research Studies at the Renewable Fuels and Byproducts Laboratory. Audubon Sugar Institute Biennial Report LSU AgCenter, pages 5-6.

2. **Aita, G.*,** Walker, M. (2012) Ammonia-Assisted Storage of Sugarcane Bagasse. ASI LSU AgCenter Factory Operations Seminar 2012: 37-39.

Harold Birkett

Refereed Scientific Articles

1. Eggleston, G., **Birkett, H**., Gay, J., Legendre, B., Jackson, W., Schudmak, C., Monge, A., Andrzewski, B., Viator, R., and Charlet, T. (2012) How combine harvesting of green cane billets with different levels of trash affects production and processing. Part I: Field yields and delivered cane quality. International Sugar Journal 114(1358):83-90.

2. Eggleston, G., **Birkett, H**., Gay, J., Legendre, B., Jackson, W., Schudmak, C., Monge, A., Andrzewski, B., Viator, R., and Charlet, T. (2012) How combine harvesting of green cane billets with different levels of trash affects production and processing. Part II: Pilot plant processing to sugar. International Sugar Journal 114(1359):169-178.

Popular Articles

1. **Birkett, H**., and J. Stein (2012) Bagasse boiler performance summary – 2011. ASI, LSU AgCenter Factory Operations Seminar 2012: 7-8.

2. **Birkett, H**., and J. Stein (2012) Starch content of several Louisiana varieties. ASI, LSU AgCenter Factory Operations Seminar 2012: 9-12.

3. **Birkett**, H., and J. Stein (2012) Update on entrainment losses. ASI, LSU AgCenter Factory Operations Seminar 2012: 15-22.

Abstracts/Oral Presentations

1. **Birkett, H.,** and J. Stein (2012) Entrainment losses in Louisiana sugar factories. 42nd Annual Joint Meeting, Amer. Soc. Sugar Cane Technol. (Louisiana and Florida Divisions), St. Pete Beach, FL, June 19-21, 2012.

2. **Birkett, H.,** and J. Stein (2013) Preliminary investigation of filter station operations. Annual Meeting Amer. Soc. Sugar Cane Technol. (Louisiana Division), Lafayette, LA, February 4-6, 2013.

Donal Day

Refereed Scientific Articles

1. K. J. Han, W.D. Pitman, M.W. Alison, D.L. Harrell, H.P. Viator, K.A. Gravois, M. Kim, **D.F. Day** (2012) Agronomic Considerations for Sweet Sorghum Biofuel Production in the South-Central USA. Bioenergy Research, DOI: 10.1007/s12155-012-9185-3.

"Agronomic considerations for sweet sorghum biofuel production in the South-Central USA" is now available as an offprint version. Bioenergy Research. 5: 748-758

2. Hee-Kyoung Kang, Nahyun M. Kim, Ghahyun J. Kim, Eun-Seong Seo, Hwa-Ja Ryu, Sang-Il Yun, Hyun-Chul Choi, **Donal F. Day**, Jongho Kim, Dong-Lyun Cho, Doman Kim (2012) Enhanced saccharification of rice straw using hypochlorite-hydrogen peroxide. School of Applied Chemical Engineering, Chonnam National University, Gwang-ju, 500-757 Korea Biotechnology and Bioprocess Engineering (impact factor: 1.41). 04/2012; 16(2):273-281. DOI:10.1007/s12257-010-0262-1

3. Jin Ha Lee, Sun Ok Lee, Gwang Ok Lee, Eun Seong Seo, Suk Sang Chang, Sun Kyun Yoo, Do Won Kim, **Donal F. Day**, Doman Kim **(**2012) Transglycosylation reaction and raw starch hydrolysis by novel carbohydrolase from Lipomyces starkeyi**.** Chonnam National University Faculty of Applied Chemical Engineering and Research Institute for Catalysis 500-757 Gwangju, Korea. Biotechnology and Bioprocess Engineering (impact factor: 1.41). 04/2012; 8(2):106-111. DOI:10.1007/BF02940265

4. Misook Kim, Kun-Jun Han, Yoonhwa Jeong, and **Donal Day (**2012) Utilization of whole sweet sorghum containing juice, leaves, and bagasse for bio-ethanol production. Food Sci. Biotechnol. 21: 1075-1080. doi 10.1007/s10068-012-0139-5.

5. Kun-Jun Han, William D. Pitman, Misook Kim, **Donal Day**, Montgomery W. Alison, Michael E. McCormick, and Giovanna Aita (2012) Ethanol production potential of sweet sorghum assessed using forage fiber analysis procedures. GCB Bioenergy. doi: 10.1111/j.1757-1707.2012.01203.x.

6. K.J. Han, M. W. Alison, W. D. Pitman, **D. F. Day**, M. Kim and L. Madsen (2012) Planting Date and Harvest Maturity Impact on Biofuel Feedstock Productivity and Quality of Sweet Sorghum Grown under Temperate Louisiana Conditions. Agronomy Journal. doi:10.2134/agronj2012.0213

7. Misook Kim, Kun-Jun Han, Yoonhwa Jeong, and **Donal F. Day** (2012) Utilization of Whole Sweet Sorghum Containing Juice, Leaves, and Bagasse for Bio-ethanol Production. Food Sci. Biotechnol. 21(4): 1075-1080 (2012). DOI 10.1007/s10068-012-0139-5

Book Chapters

1. Han, K.J., W.M. Alison, **D. Day** and M.E, McCormick (2012) Planting and harvest management impacts sweet sorghum as a biofuel crop. In 2012 AFGC Annual Conference Proceedings and Abstracts [CD-ROM computer file], 2012 AFGC Annual Conference, Louisville, KY. January 9-10

Technical Reports

1. **Day, D.F.** (2012) Final Report Dept of Energy: Biorefinery Development Using Multiple Feedstocks

Popular Articles

1. Madsen, L.R. and **D.F. Day (**2012) Starch and Residual Amylase in Raw Sugar: Developing an Assay that Works. ASI, LSU AgCenter Factory Operations Seminar 2012: 23-31.

2. **Day, Donal F.** and Lee R. Madsen (2012) The Economics of Producing Fermentable Sugars from Sweet Sorghum and Energy Cane. ASI, LSU AgCenter Factory Operations Seminar 2012: 33-36.

Abstracts/Oral Presentations

1. Han, K.J., W.M. Alison, **D. Day** and M.E, McCormick (2012) Planting and harvest management impacts sweet sorghum as a biofuel crop. In 2012 AFGC Annual Conference Proceedings and Abstracts [CD-ROM computer file], 2012 AFGC Annual Conference, Louisville, KY. January 9-10.

2. Madsen, L, **D.F. Day** and Y. Moon (2012) How the use of amylase in-process affects the assay used to quantify starch in raw sugar. Annual Meeting ASSCT, Louisiana Division, Lafayette, La. Feb 7-8.

3. **Day, D.** and L. Madsen (2012) The Economics of Fermentable Sugars from Sweet sorghum (*Sorghum bicolor*) and Energy Cane (*Saccharum spp*.) as Biofuel Feedstocks. 34th Symposium on Biotechnology for Fuels and Chemicals. New Orleans, La. April 30-May 3.

4. **Day, D.** and L. Madsen (2012) The Cost of Producing Fermentable Sugars for Biofuels from Sweet sorghum (*Sorghum bicolor*) and Energy Cane (*Saccharum spp*.). 34th Industrial Energy Technology Conference, New Orleans, La. May29- June 1.

5. Madsen L.R.II and **D.F. Day (**2012) Starch and Residual Amylase in Raw Sugar: Developing an Assay that Works. 42nd Annual Joint Meeting, ASSCT, St. Pete's Beach, Fl. June 20-22.

6. Jeong, Yonnhwa, **Donal F. Day**, Giovanna M. Aita and Misook Kim (2012) Production of cellulosic ethanol from sugarcane treated with dilute ammonia at moderate temperatures. 15th Int'l Biotech. Symp. And Expo. Daegu, ROK, Sept 16-21.

7. K.J. Han, W.M. Alison, M.E. McCormick, **D. Day**, and G. Aita (2012) Application of Feed Value Analysis for Prediction of Cellulosic Ethanol Production. CSSA Annual meeting, Cincinnati. OH 21-23 Oct.

Vadim Kochergin

Refereed Scientific Articles

1. Lohrey, C. and **V. Kochergin** (2012) Biodiesel production form microalgae: Co-location with sugar mills. Bio-resource Technol. 108:76-82.

2. **Kochergin, V.**, A. Wittenberg, F. Van Noord, S. Goudeau, I. Tishechkina (2012) Investigation of color transfer during crystallization of raw and beet sugar blends. Proc. SIT, May 6-9, 2012, Auckland, NZ, Paper No. 1033, pp. 231-241.

Refereed Scientific Articles (accepted)

1. Lohrey, C. and **V. Kochergin** (2013) Heat release from sugar piles vy ventilation with ambient air. Intl. Sugar J.

2. Gaudet, C. and **V. Kochergin** (2013) Design and industrial applications of Louisiana low Turbulence (LLT) clarifiers. Proc. Intl. Soc. Sugar Cane Technol.

Abstracts/Oral Presentations

1. **Kochergin, V.** and K. Miller (2012) Flow of C-Massecuite in cooling crystallizers: Results of pulse testing. 42nd Annual Joint Meeting, Amer. Soc. Sugar Cane Technol. (Louisiana and Florida Divisions), St. Pete Beach, FL, June 19-21, 2012.

2. **Kochergin, V.** and S. Savoie (2012) Design and operation of low residence time LLT clarifier at Lula Factory. 42nd Annual Joint Meeting, Amer. Soc. Sugar Cane Technol. (Louisiana and Florida Divisions), St. Pete Beach, FL, June 19-21, 2012.

3. Cuddihy, J., **V. Kochergin**, G. Schaffer (2012) Design and operation of Louisiana low turbulence (LLT) clarifier. PHILSUTECH, August, 2012.

4. **Kochergin, V.** (2012) Evaluation of energy cane and sweet sorghum as feedstocks for conversion into fuels and chemicals. Project Directors Meeting, ASA, CSSA and SSSA Intl. Mtg., Cincinnati, OH, Oct. 21-24, 2012.

5. **Kochergin, V.** and S. Grimaldo (2013) Removal of suspended solids from filtrate using Louisiana low turbulence clarifier. Annual Meeting Amer. Soc. Sugar Cane Technol. (Louisiana Division), Lafayette, LA, February 4-6, 2013.

6. **Kochergin, V.**, S. Polanco, S. Savoie and G. Carline (2013) Improvements of raw sugar quality with double purge of C-massecuite. Annual Meeting Amer. Soc. Sugar Cane Technol. (Louisiana Division), Lafayette, LA, February 4-6, 2013.

7. **Kochergin, V.** (2013) Update on the pilot sugar mill at Audubon Sugar Institute. Annual Meeting Amer. Soc. Sugar Cane Technol. (Louisiana Division), Lafayette, LA, February 4-6, 2013.

Benjamin L. Legendre

Refereed Scientific Articles

1. Eggleston, G., Birkett, H., Gay, J., **Legendre, B**., Jackson, W., Schudmak, C., Monge, A., Andrzejewski, B., Viator, R., and Charlet, T. (2012) How combine harvesting of green cane billets with different levels of trash affects production and processing. Part I. Field yields and delivered cane quality. Intl. Sugar J. 114 (1358):83-90.

2. Eggleston, G., Birkett, H., Gay, J., **Legendre, B**., Jackson, W., Schudmak, C., Monge, A., Andrzejewski, B., Viator, R., and Charlet, T. (2012) How combine harvesting of green cane billets with different levels of trash affects production and processing. Part II. Pilot plant processing to sugar. Intl. Sugar J. Intl. Sugar J. 114 (1359):169-178.

Refereed Scientific Articles (accepted)

1. **Legendre, B**., G. Eggleston, H. Birkett, M. Mrini, M. Zehuaf, S. Chabaa, M. Assarrar and H. Mounir. (2013) How to manage sugarcane in the field and factory following damaging freezes. Proc. Intl. Soc. Sugar Cane Technol.

2. Orgeron, A.J., J.L. Griffin, **B.L. Legendre**, K.A. Gravois, D.K. Miller and M.J. Pontif (2013) Trinexapac-Ethyl: Will it increase early season sugar accumulation? Proc. Intl. Soc. Sugar Cant Technol.

Popular Articles

1. Gravois, Kenneth A. and **Legendre, Benjamin L**. (2012). The 2011 Louisiana Sugarcane Variety Survey. Sugar Bull. 90(9):23-27.

2. Gravois, Kenneth A. and **Legendre, Benjamin L**. (2012) Sugarcane summary for crop year 2011. Sugarcane Research Annual Progress Report, LSU Agricultural Center, pp. 4-5.

3. Orgeron, Albert, **Legendre, Benjamin**, Griffin, Jim, Gravois, Kenneth and Pontif, Michael. (2012) A look at an alternative chemistry to glyphosate for use as a sugarcane ripener. Sugarcane Research Annual Progress Report, LSU Agricultural Center, pp. 182-188.

4. Orgeron, Albert, Legendre, Benjamin, Griffin, Jim, Gravois, Kenneth and Pontif, Michael (2012). A look at an alternative chemistry to glyphosate for use as a sugarcane ripener. ASI, LSU AgCenter Factory Operations Seminar 2012: 1-6.

Abstracts/Oral Presentations

1. **Legendre, B.L.** (2012) The Audubon Sugar Institute. 42nd Annual Joint Meeting, Amer. Soc. Sugar Cane Technol. (Louisiana and Florida Divisions), St. Pete Beach, FL, June 19-21, 2012.