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1. Accession  0216646	Agency Identification No.  2. CSREES 3. LA.B	5. Work Unit/Project No.  LAB93945	6. Status  Annual Report
7. Title  Modeling for TMDL Development and Watershed Based Planning, Management and Assessment			
12. Investigator Name(s) (Last Name and Initials)  Selim, H. M.; Bengtson, R. L.			
20. Termination Date 09/30/2013		40. Period Covered (mo/da/year): 01/01/2011 TO 12/31/2011	
Outputs:  These results were delivered to stakeholders in presentations at two professional conferences, and with three journal articles and two trade magazine reports.			
Outcomes/Impacts:  The main objective of this study was to assess the effect of placement of compost/mulch on runoff water quality from roadsides. Two Louisiana locations constituting four sites and eight individual plots were chosen; one in an active highway construction area and another in an established area plagued by continual rill and sheet erosion. Thicknesses of compost/mulch (five and ten cm plus control), slope inclination (10-34%), and tillage practices (one plot tilled and one non-tilled at each site) were evaluated. The compost/mulch thickness was the most influential variable affecting water quality. TSS and turbidity were significantly different across all comparative variables; including construction activities, compost/mulch applications, and tillage practices. The results confirmed the effectiveness of compost/mulch cover as a successful best management practice (BMP). Decreases in TSS of 70 and 74 percent were achieved for the 5 cm and 10 cm compost/mulch applications when compared to no mulch, respectively. Light tillage application decreased the effectiveness (by 67%) of compost/mulch coverage in reducing runoff and sediment losses compared to non-tillage.			
Publications:  Selim, H. M., C. Y. Jeong, A. E. Arceneaux, and R. L. Bengtson. 2011. Watershed Water Quality: Effect of Best Management Strategies. Louisiana Agric. 54:22-23.  Selim, H. M., Keli Zhao, Eric Feguson and Tamer Elbana. 2011. 117-19 Miscible Displacement of Zn In Soil Columns: Influence of Phosphate. Abstract ASA-CSSSA-SSSA International Annual Meeting. San Antonio, TX, Oct. 16-19, 2011.  Weindorf, D. C., N. Baker, A. E. Arceneaux, Y. Zhu and H. M. Selim. 2011. Using composted mulch for highway embankment erosion control. Louisiana Agric. 54:24-25.  Baker, N., D. C. Weindorf, D. C., Y. Zhu and H. M. Selim. 2011. Evaluation of Mulch Application as an Erosion Retardant on Louisiana Roadsides. ASA-CSSSA-SSSA International Annual Meeting. Abstract San Antonio, TX, Oct. 16-19, 2011.  Elbana, T. A. and H. M. Selim. 2011. Copper Mobility in Acidic and Alkaline Soils: Miscible Displacement Experiments. Soil Science Society of America J. 75:2101-2110.  Jeong, C. J. and H. M. Selim. 2011. Adsorption-Desorption Kinetics of Imidacloprid in Soils: Influence of Phosphate. Soil Science 176:582-588. Delaune, R. D. and H. M. Selim. 2011. Environmental Applications of Nanoscale and Microscale Reactive Metal Particles. Book Review. J. Environmental Quality 43:1683.  Selim, H. M. and B. J Naquin. 2011. Retention of Metribuzin by Sugarcane Residue: Adsorption-Desorption and Miscible Displacement Experiments. Soil Science 176:508-517.			
Participants:  H.M. Selim (PI), R.L. Bengston, LSU AgCenter.			
Target Audiences:  Louisiana farmers, environmentalists, Department of Natural Resources, and fertilizer industries.			

Nothing significant to report during this reporting period.		
Approved (Signature)	Title	Date
		