



## USDA-CSREES 2006 National Water Quality Conference

### Reducing Microbial Contamination in Runoff from Concentration Areas on California Coastal Dairies

California coastal dairies operate in watersheds that have multiple beneficial uses including recreation and shellfish harvesting. Farmers need to concentrate and handle livestock in exercise lots, sick pens, calving pens, calf corrals, feeding areas, and loafing areas. Admittedly, the use of these areas results in surfaces where vegetation may be absent or slow to regenerate. This results in increased erosion during winter storms, delivery of manure and sediment to nearby streams and rivers, and negative impacts to recreational and shellfish harvesting. We have evaluated the benefits to water quality that can be gained on-farm from erosion control and revegetation techniques commonly utilized with construction projects. These practices are designed to treat a specific area of concern and include seeding and straw mulching. In the context of coastal California, it was critical to select a combination of mulching and grass varieties that could provide maximum cover from November to May. To achieve this cover we combined a layer of straw to provide cover during early winter storms with seeding of annual barley (*Hordeum vulgare*) and rye grasses (*Lolium multiflorum*) to provide ground cover during later winter storms after the straw has decomposed. In addition to the site treatment practices, we evaluated the ability of vegetative filter strips to reduce microbial contamination in runoff from these areas. A comparison of results between treated and untreated sites will be presented for runoff sampling and analysis of fecal coliform, *Cryptosporidium*, and *Giardia*. In general, both the surface treatment practice and the vegetative filter strips reduce concentration and loading of these three contaminants in area runoff. Factors that influence the level of reduction, and that will be discussed, include slope, percent cover, and both 24-hour and annual cumulative precipitation.

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