

CTAHR KAUAI COUNTY LIVESTOCK NEWS

Tropical Pasture & Livestock Management

Ranchers from across oceans come together for a great conference



Ranchers, agency staff, and university faculty from across Hawaii, Guam, the Mariana Islands, the U.S. mainland, and the Virgin Islands learned from each other on topics ranging from beef carcass fabrication to improved Leucaena forage systems.

Beginning in 2009, a CTAHR team led by State Range Extension Specialist Dr. Mark Thorne joined forces with ranchers and local faculty of the Marianas to conduct assessments, technical workshops, and demonstrations for improving livestock and pasture management. Based on the Hawaii Grazing Academy curriculum developed by Dr. Thorne, funding from the Socially Disadvantaged Farmer and Rancher Program of the USDA National Institute of Food and Agriculture kicked off the project and further funding allowed it to expand to Palau and the Federated

States of Micronesia. Workshops, informal meetings, ranch visits, and conferences in Hawaii and in the Western Pacific have led to incredible partnerships and exchanges of information.

The Tropical Pasture and Livestock Management Conference 2013 held in June on the island of Tinian was the culmination of the work sponsored by the current round of funding. The conference began with a carcass fabrication demonstration by Jill Andrade and Roy Mattos of Big Island Beef with beef provided by a Tinian

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“There are two spiritual dangers in not owning a farm. One is the danger of supposing that breakfast comes from the grocery, and the other that heat comes from the furnace.”

-- Aldo Leopold, *A Sand County Almanac* (1949)



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Cattlemen's Association rancher. Roy even showed how he makes his special recipe sausage and smoke meat, and a smokehouse was built the next day specifically for this demonstration.

The two days of lectures covered a wide array of topics. Lawrence Duponcheel of the Northern Marianas College and Tinian Cattlemen's Association, and Don Farrell, local historian with the Tinian Mayor's Office, painted a fascinating picture of livestock production's past, present, and future on the island. Bruce Dunlop of Lopez Island Farm, Washington, has been working with co-ops, non-profits, and businesses around the world making modular and mobile slaughter plants. He gave many examples of systems that may work well with the unique constraints of producing, processing, and marketing local meats in an island setting. Following along the slaughter and processing theme, Dr. Louis Petersen, Jr., Commissioner of Agriculture for the U.S. Virgin Islands described their government operated slaughterhouse. A key point he made was that while that plant currently must be subsidized, the public value created by providing the affordable service to local producers far outweighs program costs and ultimately favors consumers and businesses. Wrapping together the slaughter and processing theme was Jill Andrade with an excellent video walking us through their plant from receiving through packaging. Her perspective as both a larger scale slaughter/processor and family rancher was greatly appreciated by the audience. Interesting to me was her description of converting their ranch operation to primarily a background/finishing specialty to ensure both quantity and quality of animals coming into the plant and so they are able to adjust inventory with a few months notice. During both days, employees of the NRCS and FSA gave overviews of the many programs available to Pacific Island and Hawaii ranchers.

CTAHR team members gave various updates and reports. Glen Fukumoto showed pictures depicting the many workshops and demonstrations conducted as part of the project: artificial insemination education, *Leucaena* plantings, grass plots, weed management, and pasture walks. Dr. Thorne discussed the increasingly important role tropical livestock production will play in feeding a growing

global population. Dr. Linda Cox described the Calf-XL tool available for free to assist producers in determining their cost of production. Did you make a profit this year? How can you know unless you know what it cost to get your product to market? Soil Specialist Dr. Jonathan Deenik described Tinian's unique soils and great production potential. Dr. CN Lee has recently been studying heat stress in both dairy and beef cattle in Hawaii, the mainland, and the Virgin Islands. Heat stress can quietly, but also significantly, eat away at your profits by causing poor gains, poor reproductive performance, or secondary health problems. Small ruminants are a growing sector in the Western Pacific, so I spoke on some of the common health problems affecting sheep and goats in the tropics. A project partner from the



Tinian beef raised on improved *Leucaena* being grilled over a *Leucaena* wood fire.

beginning, Dr. Bob Godfrey of the University of the Virgin Islands spoke on various research projects studying the Senepol beef cattle breed developed in the Caribbean for their environmental conditions. Senepol genetics are now in the Marianas.

Conference participants were generously hosted by the Tinian Mayor's Office and the Tinian Cattlemen's Association. Countless individuals gave of their time and talents during the field tour of local ranches, historical sites, and banquet. We greatly appreciate the hospitality shown to the team on all islands over the years of the project. The friendships forged will go well beyond the funding period as we continue to communicate and learn from each other.



Photo Gallery: TPALM 2013

Some pictures from before, during, and after the conference



Top (L-R): Dr. Lee learns about Guam's brown treesnake problem; Part of the bounty from the Hamamoto Tropical Fruit World agro-tourism site. Middle (L-R): A Saipan farmer's market; View of southern Saipan and Tinian from Mt. Tapochau. Bottom (L-R): Tinian's famous boonie peppers used for donne sali chili paste; Loading bay for the "Little Boy" atomic bomb.

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Top (L-R): Conference participants tour the Artificial Insemination Center recently built by the Tinian Cattlemen's Association; Rows of *Leucaena* var. Tarramba in a demo plot. The >20' trees were allowed to grow for seed collection and are less than 3 years old; Bottom (L-R): Goats supplemented with coconuts; A typical Tinian pasture.

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EASY GOAT ADOBO



Photo: Drarazona, wikimedia.org

Too busy or tired to cook after your get home from work? Try this easy slow cooker recipe before you head out the door in the morning.

From: Meat Goat Basics for Hawaii, upcoming CTAHR extension publication by John Powley, Matt Stevenson, and Mark Thorne.

- 3 lbs goat meat, cut into 1" cubes**
- 1 medium onion, diced**
- 6 cloves of garlic, crushed**
- 1 T fresh ginger, minced**
- 2 bay leaves**
- ¾ cup shoyu**
- ¾ cup white vinegar**
- 1 teaspoon black peppercorns, coarsely crushed**
- Hawaiian chili peppers to taste**

Place cabrito and onion in a slow cooker. Combine remaining ingredients in a bowl and pour over cabrito. Set on low and cook for 6 – 8 hours.

See, told you it was easy!



RESEARCH ROUND-UP

This section briefly summarizes current or historical livestock and pasture research that may be of interest to Kauai's producers. These synopses are provided for information only and inclusion or exclusion of research articles here is not meant as an endorsement or rejection of referenced material.

Pigs on Kikuyu grass Pasture

Owing to rising feed costs and consumer demand, some swine producers are looking into pasturing pigs. Most research has been done on temperate pastures, so South African researchers evaluated Kikuyu grass as forage. The authors conclude that, "Kikuyu may potentially offset a 20% reduction of concentrate intake, thus contributing towards reduction of feed costs." Hopefully this will lead to more work on tropical pastured pigs. Kanga, J.S. et al. 2012. *Estimating pasture intake and nutrient digestibility of growing pigs fed a concentrate-forage diet by n-alkane and acid-insoluble ash markers*. Trop. Anim. Health & Prod., vol. 44, iss. 7, pgs. 1797-1802.

Heard of a "Flerd"?

For several years, Dr. Dean Anderson of the USDA Agricultural Research Service in New Mexico has been developing a method for improving mixed-species stocking called bonding. By penning young small ruminants with cattle for 30 days, the animals can form a bond resulting in a "flerd" (flock + herd). In this review paper, Dr. Anderson and co-authors identify at least four advantages for creating livestock bonds when running mixed species: 1) Decreased losses to canines, 2) Less management time as small ruminants will consistently be found with the cattle herd, 3) Fencing for cattle will be adequate for bonded small ruminants, and 4) Bonded sheep and goats more evenly use the pasture compared to non-bonded animals thus improving pasture use efficiency. As with anything, there are

shortcomings or cons that must be considered with any management option such as startup costs, new or modified infrastructure, increased labor where species' needs do not overlap. Dr. Anderson is currently assisting a Maui ranch and CTAHR with application of this method in Hawaii.

Anderson, D.M. et al. 2012. *Managing livestock using animal behavior: Mixed-species stocking and flerds*. Animal, vol. 6, iss. 8, pgs. 1339-1349.

Hawaii Beef Quality: Local Grass-finished vs. Mainland Feedlot-Finished

CTAHR Beef Initiative Group members Dr. Yong Soo Kim and Glen Fukumoto led a study on beef quality of cattle from the Mealani Research Station that were forage-finished in Hawaii and feedlot-finished in Washington State. Mealani cattle that were finished on the mainland had higher ADG, carcass weights (777 vs. 638 lbs.), and more backfat (0.53" vs. 0.26") than cattle from the same cohort finished on Kikuyu grass at the station. However, USDA quality grade, marbling score, and tenderness were comparable between groups. The authors conclude, "subtropical pastures can support cattle growth to finishing at a rate comparable to that found in a mixed system of grazing and feedlot finishing, and finishing cattle on subtropical pasture can produce as tender beef as feedlot finishing." Kim, Y.S. et al. 2012. *Carcass quality and meat tenderness of Hawaii pasture-finished cattle and Hawaii-originated, mainland feedlot-finished cattle*. Trop. Anim. Health & Prod., vol. 44, iss. 7, pgs. 1411-1415.

Foraging Space Benefitted Rhode Island Red Layers in the Tropics

Researchers in tropical Mexico studied the effects of outdoor foraging space on RIR laying hens. Both indoor and outdoor raised hens had access to as much commercial feed as they wanted, but foraging hens had a

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significantly higher rate of lay. Hens with outdoor access also had larger eggs with darker yolks, but yolks were slightly smaller than indoor raised hens. Overall, the authors conclude that giving outdoor space to RIR hens was beneficial in the tropics.

Mohammed, K.A.F. et al. 2013. *Egg production, egg quality, and crop content of Rhode Island Red hens grazing on natural tropical vegetation.* Trop. Anim. Health & Prod., vol. 45, iss. 2, pgs. 367-372.

A Case for Mixed Farming Systems for Small Tropical Islands

In this paper, researchers with extensive experience in the French Caribbean islands make a strong case for multi-disciplinary approaches to match the diverse and complex problems facing tropical island agriculture. Mixed Farming Systems (MFS) are those where crop and livestock systems are intertwined owing to complementarities in production, to spread risk, and for flexibility in production efforts. Tropical islands in particular need MFS owing to geographical isolation, high variation in agronomic productivity, land pressures owing to increased tourism, and rapid loss of rural traditions and land-based economies. Research has generally ignored holistic approaches in these areas owing to their complexity and site-specific applications. These issues underscore the dire need for funding for a genuine producer-researcher team approach across disciplines.

Gonzalez-Garcia, E. et al. 2012. *The complex nature of mixed farming systems requires multidimensional actions supported by integrative research and development efforts.* Animal, vol. 6, iss. 5, pgs. 763-777.



PHOTO QUIZ




Last issue's quiz - This cow pie on Maui has been broken open by someone's boot (on purpose). What's so special about it and why should I care?

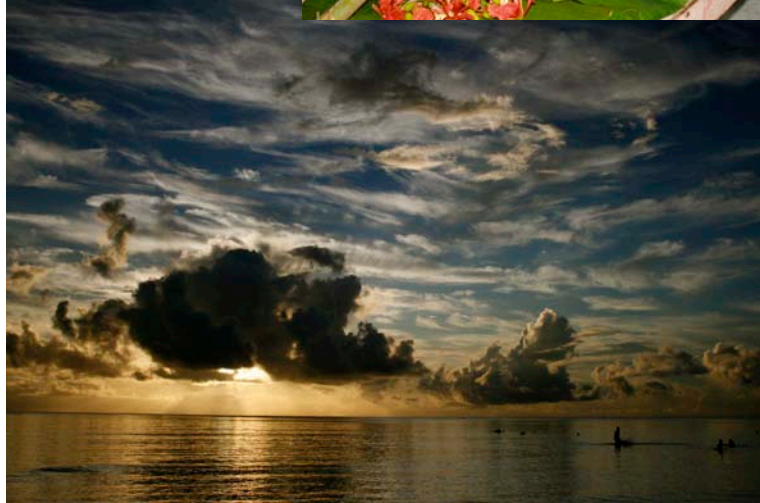
Answer: This photo was taken at the Mob Grazing workshop sponsored by the Maui Cattlemen's Association in 2011. The dark streak is soil from dung beetle activity. Furthermore, Greg Judy explained that the ideal texture of cow patties should be like pumpkin pie. This texture indicates the right balance of forage moisture to nutrient content. I don't think Thanksgiving dessert will ever be the same for me.



This issue's quiz - What is this and where did it come from?

Send your ideas, comments, or snarky remarks to Matt at stevens@hawaii.edu. The answer will be discussed in the next issue. 

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Top (L-R): Participants learn about the Mariana's famous latte stones; It wasn't all about beef. Bottom: A Saipan sunset.

*****NOTE*****

To conserve resources, the Kauai County Livestock News is now a completely digital publication. However, if you do not have Internet access or do not use e-mail and would like to receive a hard copy of this newsletter, please call me at the number below with your name and mailing address.

“The land is so much more than its analysis.”
 --John Steinbeck, *The Grapes of Wrath* (1939)

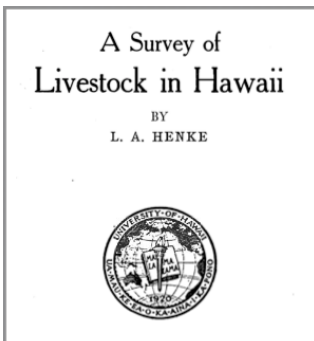
NEW FROM CTAHR EXTENSION



CTAHR economist Stuart Nakamoto recently developed a guide for assessing agri-business risk:

Producer Business Checkup

<http://www.ctahr.hawaii.edu/oc/freepubs/pdf/EI-23.pdf>



An oldie, but newly digitized, is this excellent history of livestock in Hawaii published in 1929 by L.A. Henke:

A Survey of Livestock in Hawaii

<http://www.ctahr.hawaii.edu/oc/freepubs/pdf/RP-5.pdf>



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