49 Effect of biotin supplementation on biotin status of lactating dairy cows of different milk yields. G. Ferreira*, W. P. Weiss, and L. B. Willett, *The Ohio State University*, *Wooster*.

We hypothesized that biotin status is lower for high-producing cows than for low-producing cows. Twenty high-producing (HP) and 20 low-producing (LP) Holstein cows (43±5 and 23±4 kg/d, respectively) were used. Treatments consisted of a basal diet that contained 0 or 0.96 mg of supplemental biotin per kg of DM (C and B, respectively). Biotin status was determined by measuring avidin-binding substances (ABS) in plasma and milk. Plasma and milk samples were collected on d 15. Biotin status was also determined by measuring the urinary excretion of 3-hydroxy-isovaleric acid (3HIA) before and after an intraruminal challenge (d 16) with 1.36 mol of isovaleric acid (IVA). Urine samples were collected at 0, 8, 12, 24 and 48 h after challenge. Milk yields were 23.7, 24.4, 41.1 and 44.5 kg/d for LP-C, LP-B, HP-C and HP-B, respectively (SEM = 1.5). Concentrations of ABS in plasma and milk were not affected by production, but were increased by biotin supplementation. Concentrations in plasma were 1.09 and 1.92 ng/mL and 45 and 153 ng/mL in milk for C and B, respectively. No interaction was observed between production and biotin supplementation for ABS in either plasma or milk. The output of ABS in milk was increased by both production and biotin supplementation (0.8, 1.7, 3.4 and 7.0 mg/d for LP-C, LP-B, HP-C and HP-B, respectively). The 3HIA to creatinine ratio (3HIA/CREAT) in urine at 0 h was not affected by either production or biotin supplementation (67 mmol/mol). Intra-ruminal challenge with IVA increased the 3HIA/CREAT in urine, being greatest at 8 h, and greater for HP cows than for LP cows (150 and 119 mmol/mol, respectively). The 3HIA/CREAT in urine was not affected by biotin supplementation. Based on these results, production does not affect suggested measures of biotin status (i.e., plasma and milk ABS and urine 3HIA). Our data suggest that either our hypothesis is incorrect, or that the suggested measures are not appropriate measures of biotin status. Measuring actual biotin in fluids and/or measuring urine 3HIA after an extended challenge with IVA might be more appropriate measures of biotin status.

Key Words: Biotin Status, 3-Hydroxy-Isovaleric Acid, Isovaleric Acid

50 Effects of milk feeding period and anthelmintic treatment on fecal egg counts and growth in pastured dairy steers. B. M. Thompson*, S. P. Washburn, B. A. Hopkins, J.-M. Luginbuhl, H. M. Glennon, and C. Brownie, *North Carolina State University*, *Raleigh*.

A 2 x 2 factorial trial with 2 phases was conducted to evaluate the effects of weaning age (6 wk vs 12 wk) and anthelmintic treatment (none vs dewormed) on weight gain (ADG) in 36 Holstein and Jersey x Holstein crossbred steer calves born in Fall (Oct-Nov) and Winter (Dec-Feb) 2003-2004. Steers were blocked into 4 treatment groups by birth weight and breed. Calves of similar age were managed together in pastures regardless of treatment and group-fed 3.8 to 7.6 L of whole milk/d until weaning. Phase 1 (P1) extended from birth to July 15, 2004. Phase 2 (P2) started on July 15 and ended on Nov 18, 2004. Dewormed calves received 1mL ivermectin/10kg BW at 12 and 20 wk of age, and again on July 15 and Sept 23. Fecal samples and BW (birth to Nov 18, 2004) were taken from each calf at 4-wk intervals. Fecal egg counts (FEC), BW (see table), and ADG (during P1, P2 and P1& 2 combined) were compared among deworm, wean age, %Holstein, birth season, and their interactions. Parasite eggs were not detected until April and were lower (P<.001) in dewormed calves after July and Sept treatments. Fall-born calves usually had lower (P<.05) FEC than Winter-born calves. Gains during P1 were higher (P<.01) for Fall-born calves. In P2, dewormed calves actually had a higher ADG (P<.05) than non-dewormed calves. Gains across P1 and P2 were higher in Fall-born calves and tended to be higher (P=.06) in calves weaned at 6 wk. Gains and BW generally were higher with increasing %Holstein. Although steers that were not dewormed had higher FEC and differing ADG during parts of the trial, their overall performance was similar to those that received 4 doses of ivermectin.

LS Means +/- SE for Body Weights by Deworm, Wean Age, and Breed

	Deworm +	Deworm -	Wean Age 6wk	Wean Age 12wk	25% Holstein	50% Holstein	75% Holstein	100% Holstein
Birth	35.5+1.3	35.3+1.3	35.4+1.2	35.4+1.3	29.4+2.3^{a}	36.2+1.8^{b}	37.0+1.7^{b}	39.0+1.2^{b}
July 15	184.1+8.0	188.6+7.7	193.1+7.6	179.7+7.8	167.4+13.7^{a}	184.5+10.7^{ab}	190.6+11.5^{ab}	203.0+7.6^{b}
Nov 18	243.8+8.1	236.0+7.8	249.1+7.7^{c}	230.6+7.9^{d}	231.8+13.9	230.8+10.8	244.4+11.7	252.6+7.7

*All values reported in kg BW; Means with different symbols differ:a,b P<.05; c,d P=.07

Key Words: Anthelmintic, Weaning, Gain

Horse Species: Emerging Equestrian Varsity Competition

51 Integration of academic equine sciences and intercollegiate equestrian programs. G. Potter*, *Texas A&M University*, *College Station*.

Students in equine science programs need hands-on laboratory and extracurricular experiences with horses to enrich their academic training. The Intercollegiate Horse Show Association (IHSA) was formed in the late 1960's to provide college students extracurricular riding opportunities. Historically, IHSA programs have been conducted at the student club level at most institutions. Also, the overwhelming majority of students in equine sciences and IHSA activities are women. Thus, a women's equestrian team is an attractive option for athletic departments that have interest in adding women's sports. Recently NCAA division I universities have begun fielding varsity, women's equestrian teams. Such is the case at Texas A&M University (TAMU). An IHSA club-level program had been in place at TAMU for many years as a part of the Equine Sciences Program. In the late 1990's, the Associate Director of Athletics and the Equine Sciences Program Leader at TAMU began discussions regarding offering a varsity Women's Equestrian Team and merging that program with the existing Equine Sciences Program. Subsequently, the Director of Athletics and the Head of the Department of Animal Science approved a proposal outlining mutual use of the existing Equestrian Center and horses to support a varsity Equestrian Team and the riding component of the Equine Sciences Program. This program is jointly managed by both departments, and is a win-win program. The Equine Sciences Program benefits tremendously from the enhanced exposure and financial support of the Athletics Department, and serves as a recruiting tool for the Equestrian Team. The Athletics Department benefits from the use of facilities and horses to field the Equestrian Team and having another women's team with a large number of students. This has been and a very successful merger. It works primarily because of the mutual respect and support of the combined program by all the people involved, and it has generated tremendous visibility and support in both the horse industry and the alumni of Texas A&M University.

Key Words: Equestrian, Varsity, Equine Sciences