losses, this effect could not be attributed to increasing the number of cows with a CL at initiation of Resynch. Furthermore, PGF+RES cows had a 2 wk delay in the Resynch TAI compared to RES cows which would diminish the impact of improved fertility on 21-day pregnancy rate.

Key Words: Resynch, Prostaglandin F $_{2\alpha}$, Dairy Cows

125 Reducing the interval from Presynchronization to initiation of timed AI improves fertility in dairy cows. K. N. Galvao*, M. F. Sa Filho, and J. E.P. Santos, *School of Veterinary Medicine, University of California Davis*, *Tulare*.

Objectives were to determine if shortening the interval from presynchronization to the first GnRH (G1) in a Presynch/timed AI (TAI) protocol improves conception rate (CR). Holstein cows, 1214, at 37±3 d in milk (DIM) were stratified by parity, DIM, and milk yield, and randomly assigned to: PShort (n = 410), two injections of PGF2a (PG) at 40 and 54 DIM, then enrolled in a TAI 11 d later; PShortG (n = 392), same as PShort, but with an injection of GnRH 7 d before G1; Control (n = 412), two injections of PG at 37 and 51 DIM, then enrolled in a TAI 14 d later. All cows received the same TAI protocol (d 65, G1; d 72, PG; d 73, 1 mg of ECP; d 75, TAI). A subset of 1000 cows had their ovaries scanned at 65 and 72 DIM, which coincided with injections of GnRH and PG of TAI, respectively, to determine CL and ovulation to G1. Pregnancy was diagnosed on d 38 and 65 after AI. Data were analyzed with pre-planned orthogonal contrasts to determine the effect of interval (PShort + PShortG vs. Control) and GnRH treatment (PShort vs. PShortG). Results are depicted in the following sequence: PShort, PShortG, and Control. Presence of a CL at G1 was not influenced (P=0.95) by interval, but GnRH increased (P<0.01) the proportion of cows with CL (74.2, 88.2, and 80.6%). Ovulation to G1 was greater (P<0.01) for the short interval compared with Control, but GnRH did not improve (P=0.28) ovulation (61.4, 62.2, and 44.7%). The increased ovulation to G1 was primarily caused by greater (P<0.01) ovulatory response in cows with a CL at G1 (54.4, 59.7, and 37.2%), but did not differ (P=0.64) for cows without a CL at G1. Treatment affected the CR on d 38, and was greater (P=0.04) for the short interval compared with Control, but addition of GnRH did not improve (P=0.19) CR (40.5, 39.8, and 33.5%). The same effects were observed for CR on d 65 after AI (36.7, 36.2, and 30.5%). Cows ovulating to G1 had greater (P<0.05) CR regardless if they had (42.2 vs. 37.7%) or not (27.6 vs. 15.4%) a CL at G1. Shortening the interval from presynchronization to initiation of TAI from 14 to 11 d increased ovulatory response and conception rates in dairy cows.

Key Words: Dairy Cow, Presynchronization, Reproduction

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126 Effects of dim light at night on milk yield, milk composition and endocrine profile of lactating dairy cows. M. A. Bal*[1], G. B. Penner[1], M. Oba[1], and A. D. Kennedy[2], [1]*University of Alberta*, *Edmonton, AB, Canada*, [2]*University of Manitoba*, *Winnipeg, MB, Canada*.

Twenty-four multiparous lactating dairy cows (139 ± 34 DIM) were assigned to two different light intensities from 6 PM to 4 AM daily in a cross-over design with 28-d periods to evaluate the effect of night dim-light. It was hypothesized that night dim-light would increase milk production by decreasing melatonin concentration and increasing IGF-1 concentration in plasma. Light intensity during the day was approximately 200 lux and light treatments at night were 0-5 lux (CONTROL) and 40-60 lux (DIM LIGHT). Each group of animal (n=12) was placed on either the north or south side of the tie stall barn. Light intensity of the barn ranged from 40 to 60 lux at night but was reduced to < 5 lux for the CONTROL by placing black tarps near the light fixtures. Feed was offered in a TMR once daily at 9 AM. Blood samples for hormone analyses were taken every two hours at the last day of each period from 6 PM to 2 AM. There was no significant difference for milk, fat, protein, and lactose yields between CONTROL and DIM-LIGHT treatments, averaging 33.2, 1.04, 1.02, and 1.45 kg/d, respectively. Similarly, milk fat and protein concentrations were not affected by treatment. Concentration of lactose was significantly higher ($P < 0.01$) for DIM LIGHT than CONTROL (4.42% vs. 4.38%). Plasma prolactin concentration at 6 PM (during day-time) tended to be higher ($P = 0.07$) for DIM-LIGHT (15.1 ng/ml) than CONTROL (11.4 ng/ml). No change in prolactin was seen from 6 PM to 10 PM with DIM-LIGHT, but it increased 61% from 6 PM (11.4 ng/ml) to 10 PM (18.7 ng/ml) with CONTROL. Plasma IGF-1 concentration was not affected by treatment at 6 PM (123.1 ng/ml) or 10 PM (127.1 ng/ml). Day-time (6 PM) plasma melatonin concentration was relatively high (10.3 pg/ml). Treatment had no effect on the night-time plateau in melatonin found at 10 PM (21.5 pg/ml) and 12 AM (19.8 pg/ml). These data indicate that night dim-light (40-60 lux) modified the natural diurnal rhythm in plasma prolactin but not melatonin, and had a positive effect on milk lactose concentration but not yield.

Key Words: Dim Light, Milk Production, Melatonin and Prolactin

127 Effects of dairy dry lot corral management on air emissions. L. M. Nuckles* and F. M. Mitloehner, *University of California*, *Davis*.

The objective of this study was to evaluate the effects of drylot corral waste management on emissions of smog-forming compounds and greenhouse gases. The San Joaquin Valley of California is the leading dairy region of the United States but also known as the worst non-attainment area for smog. A total of 96 Holstein dry cows were housed in four, totally enclosed cattle pen enclosures (CPEs) and were fed a TMR *ad libitum*. Eight cows were housed in each of the four CPEs during each of three, 14 day replications. The experimental design was a CRD. Cows were randomly sorted into four groups and stratified by weight. Treatments were (1) control, manure accumulated for 14 days (CON), (2) acidifier surface application (sodium bisulfate, SBS), (3) frequent harrowing (HAR), and (4) scraping (SCR). Emissions of the smog-forming alcohols ethanol (EtOH) and methanol (MeOH) as well as the greenhouse gases (GHG) carbon dioxide (CO_2), nitrous oxide (N_2O), and methane (CH_4) were measured continuously from the CPEs′ air inlets and outlets. Gaseous concentrations were sampled using a photoacoustic gas-analyzer (INNOVA 1412) and emission rates (kg/cow/yr) calculated. Data were analyzed using Proc MIXED procedures in SAS. Overall, alcohol emissions for SBS were lower ($P < 0.05$) compared to all other treatments. EtOH emission rates

for SBS, CON, HAR, and SCR were 1.54, 7.8, 8.9, and 7.8 kg/cow/yr, respectively. MeOH, emission rates for SBS, CON, HAR, and SCR were 3.4, 10.3, 12.2, and 10.8 kg/cow/yr, respectively. SCR compared to SBS, CON, HAR showed reduced ($P < 0.05$) emission rates for N_2O, CO_2, and CH_4. Emission rates for CH_4 and N_2O were higher in SBS ($P < 0.05$), while CO_2 emission rates were lower compared to the other treatments ($P < 0.05$). This study suggests that surface acidifier (SBS) applied to dairy drylot corrals can reduce alcohol emissions, thus lowering resulting smog pollution. Surface acidifiers have inconclusive effects on GHG emissions. Scraping and harrowing of corral surface manure show little promise to reduce emissions of both smog forming compounds and greenhouse gases from dairies.

Key Words: Waste, Greenhouse Gases, Alcohols

128 Characterization and quantification of emissions from dairies. N. M. Marcillac*[1], F. M. Schwander[1], R. F. Follett[1], J. L. Collett[2], and N. P. Hanan[1], [1]*Colorado State University*, *Fort Collins*, [2]*USDA/ARS*, *Fort Collins, CO*.

Animal agriculture is a major source of atmospheric pollutants, but the nature and dispersion of those pollutants is not well known. This study aimed at quantifying emissions of ammonia (NH3), ammonium (NH4), nitric acid (HNO3), PM2.5, methane (CH4), carbon dioxide (CO2), and nitrous oxide (N2O) from dairy systems, and characterizing the spatial, diurnal, and seasonal variability of those emissions. Using a unique mobile sampling methodology employing helium balloons, filter packs, syringe pumps and a tethersonde climate sampling system, gases and particulates were measured at five heights (2 to 40 m high) at three locations downwind and one location upwind of a dairy. This innovative technique provided a spatially resolved characterization of the emission plume. Measurements were made at two dairies, seasonally, over two years from summer 2005 to winter 2006. Preliminary results show that the concentration of each compound varies spatially with height and has a strong seasonal variability. HNO3 had an inverse concentration to NH4 and typically was lower in downwind air, indicating consumption by conversion to ammonium nitrate. NH3 had a large differential from the upwind concentration ($P < 0.05$), especially in the summer months, and indicated a strong source from the dairy. The differential concentration of CH4 was greater than the other greenhouse gases ($P < 0.05$), while N2O and CO2 had very small contributions to total emissions. Peak concentrations were found at or near ground level ($P < 0.05$) with differentials 2 to 3 times greater than the upper heights, reflecting a strong local source. This data is helpful in characterizing the emission plume from dairies, aiding scientists and regulators in better understanding emissions from dairy operations.

Key Words: Dairy Emissions, Ammonia, Greenhouse Gases

129 Effects of waste management techniques to reduce dairy emissions from freestall housing. M. S. Calvo*, K. R. Stackhouse, and F. M. Mitloehner, *University of California*, *Davis*.

The objective of this study was to reduce smog-forming and green house gas emissions (GHG) from lactating Holstein cows using industry typical freestall waste management. The San Joaquin Valley (SJV) in Central California is the largest milk producing region in the United States. The valley suffers from substantial smog forming gases (aka Volatile Organic Compounds, VOC), and GHG emissions. Typical dairy freestall waste management in the SJV includes flushing and scraping. In the present study, four treatments were compared in groups of three cows/group. A total of nine lactating Holstein cows were randomly assigned into three groups and each group underwent all treatments using a CRD. The four treatments were 1) no waste removal (CON), 2) flushing three times daily (FL3), 3) flushing six times daily (FL6), and 4) scraping three times daily (SC3). Cows were fed a TMR *ad libitum* and housed in freestalls that were located inside an environmental chamber. VOC and GHG emission concentrations were measured using a photo acoustic gas analyzer (INNOVA 1412). Emission rates were calculated in kg/cow/year and analyzed using PROC MIXED in SAS. All emission compounds showed differences across treatments. As a general trend, CON showed highest emissions ($P < 0.05$), followed by SC3, FL3, and FL6. Flush vs. dry waste removal techniques (flushing vs. scraping) is approximately twice as effective ($P < 0.05$) in reducing VOC emissions under freestall conditions. More frequent flushing of dairy waste (FL6 vs. FL3) leads to further reduction of VOC emissions. GHG emissions were similar across treatments. The results of this study indicate that waste removal techniques used on modern dairies can decrease dairy air emissions. Consequently, VOC and GHG that promote smog and climate change can be reduced effectively through management of cow housing.

Key Words: Dairy, Waste, Emissions

130 Nitrogen losses from dairy manure estimated through nitrogen mass balance or using markers. A. N. Hristov*[1], S. Zaman[1], M. Vander Pol[1], P. Ndegwa[2], S. Silva[3], and C. Kendall[2], [1]*University of Idaho*, *Moscow*, [2]*Washington State University*, *Pullman*, [3]*U.S. Geological Survey*, *Menlo Park, CA*.

The objective of this study was to estimate N losses from dairy manure using N mass balance and other indirect approaches. The study was conducted at the University of Idaho Dairy Center, which is a free-stall facility with scraping system for manure removal. The study was conducted with one pen of 18 lactating Holstein cows. The duration of the trial was 30 d. Manure was scraped and removed from the pen once daily. Feed delivered and milk yields were recorded daily. The amount of manure removed from the pen was recorded daily and samples were collected for analyses, 24 h after excretion. Grab fecal and spot urine samples were colleted weekly from each cow. Output of urine and feces was estimated using acid-insoluble ash and creatinine as markers. Feces, urine, and manure samples were analyzed for N, ^{15}N, P, Cu, and Ca. Average daily N input with feed was 12.9±0.10 kg, or 385.8 kg for the duration of the trial. Average milk yield per cow was 37±0.2 kg/d with 3.9±0.08% crude protein content. Total N secreted with milk was 100.5 kg. Excretion of N with feces and urine was estimated at 224.3 kg. Manure N collected from the pen during the trial was 134.3 kg. Thus, 40% of the N excreted by the cows could not be accounted for in manure removed from the pen 24 h after excretion. Using N:P, N:Cu, and N:Ca ratios in fresh and 24-h manure, 60, 61, and 63% of the excreted N could not be accounted for. ^{15}N abundance of manure N increased in 24 h, from 1.344‰ to 4.887‰, presumably due to the loss of highly depleted in ^{15}N ammonia. Under the conditions in which this study was conducted (15.6±3.9°C; 2.3±1.0 m/s wind speed; and 72.6±12.5% RH), N losses from manure were high in the first 24 h after excretion. Data suggest that ratios of N to non-volatile elements and ^{15}N analyses may be useful in estimating N losses from cattle manure.

Key Words: Dairy Cow, Manure, Nitrogen Losses

131 Comparision of the Intergovernmental Panel on Climate Change (IPCC) system for estimating methane emission from dairy cows. S. K. Nes*, H. Volden, and S. J. Krizsan, *Norwegian University of Life Sciences*, *Ås, Norway*.

The objective of this study was to compare IPCC (2001) guidelines for estimating CH_4 emission by using a more advanced model, which include information on diet composition and animal production level. The IPCC has a 2-tiered system for estimating emission from enteric fermentation. Tier 1 is a simplified approach based on a fixed emission factor (EF) for each animal category. Until 2006 Norwegian calculations have been based on Tier 1. Tier 2 is a more complex approach where EF is developed based on country-specific data as nutrient requirements and feed intake. However, the IPCC has recommended using more advanced methods that goes beyond the Tier 2. About 90 % of the dairy cows in Norway are registered in the Cow Recording System (CRS), which contains detailed information regarding annual milk production and proportion of concentrate in the diet. Information from 1.16 million observations was used to calculate standard lactation curves and feed rations at different yields, feed intake, forage quality and forage:concentrate ratio. Using these data simulations average values of CH_4 production was calculated from 2 equations (Kirchgessner et al., 2005; Mills et al., 2003). Moreover, 2 multiple regression equations were developed where proportion of feed concentrate and milk yield were the only variables used to predict intake of GE and CH_4 conversion rate. to compare different methods CH_4 emission (kg/head per year) was calculated at 5000 (LP) and 9000 (HP) kg milk/year and at 2 levels of concentrate: 20% (LC) and 50% (HC). Estimated emission was constant regardless of level of yield and concentrate with Tier 1. Within LP and HP, Tier 2 and Tier 3 estimated 107 and 150, and 135 and 153 kg, respectively. There was no difference in estimating emission between LC and HC according to Tier 2. However, Tier 3 predicted higher emission at LC and HC at both yields but the difference was more pronounced at HP.

Key Words: Concentrate Level, Methane Emission, Milk Yield

132 Prediction of DHI udder health values from bulk tank information. A. J. Young*[1] and S. P. Tripp[2], [1]*Utah State University*, *Logan*, [2]*DHI-Provo Computing Service*, *Provo, UT*.

Identifying and predicting udder health problems are easily accomplished using DHIA information. However, many herds are not on DHI or experience problems between tests. The objective of this study was to determine if bulk tank somatic cell information could be used to predict potential udder problems and milk loss. DHI test information was collected from 17 dairies (13 Utah, 2 Idaho, 1 Montana and 1 Nevada) from January 2004 to December 2006. Bulk tank milk values were also collected and matched with test day information. After editing, 449 individual test days were used in the analysis. The bulk tank average SCS for the dataset was 4.19 with a range of 1.45 to 6.46. Correlation between DHI and bulk tank SCC and somatic cell score (SCS) were 0.842 and 0.898, respectively. Correlations with bulk tank SCS and the percent low (0-4), medium (5-6) and high (7-9) SCS from DHI were -0.834, 0.712 and 0.827, respectively. Linear and quadratic equations were developed using proc mixed models to predict percentage of cows in each of the SCS categories from bulk tank milk SCS. Both equations gave similar results for SCS of 3, 4 and 5 (range of differences was -0.6% to 0.37%). However, for SCS of 6, the quadratic equation predicted a higher percentage (+2.76%) of cows in the high category than the linear equation. Proc mixed results suggest that the quadratic equation was a better model than the linear. Several equations predicting milk loss percentage based on bulk tank SCS or SCC were found in the literature. Linear and quadratic equations were developed using milk loss percentage for each equation compared with bulk tank SCS. Using linear equations, the average milk loss for a bulk tank SCS of 3, 4, 5 and 6, was 0.94, 3.29, 5.65 and 8.0%, respectively. Using quadratic equations, the average milk loss based on a bulk tank SCS of 3, 4, 5 and 6, were 1.24, 2.84, 5.77 and 10.03%, respectively. We conclude that in the absence of DHI information, bulk tank SCS can closely predict values expected from DHI in terms of percent cows with high, medium or low SCS and percent milk loss.

Key Words: DHI, Bulk Tank, SCS

133 Variance components of test-day milk, milk components, and somatic cell score useful for management advice. M. Caccamo*[1], R. F. Veerkamp[2], G. de Jong[3], M. H. Pool[2], R. Petriglieri[1], G. Azzaro[1], and G. Licitra[1,4], [1]*CoRFiLaC, Regione Siciliana*, *Ragusa, Italy*, [2]*Animal Breeding and Genomics Center, ASG, WageningenUR*, *Lelystad, The Netherlands*, [3]*NRS*, *Arnhem, The Netherlands*, [4]*D.A.C.P.A. University of Catania*, *Italy*.

Test-day (TD) models are used worldwide to perform national genetic evaluations for dairy cattle. TD models estimate (changes in) lactation curves, and variation around typical population or herd lactation curves, after adjustment for fixed effects and removal of environmental effects. Although potentially useful, little attention has been put on application of TD models for management purposes. The aim of this study was to estimate variance components for milk, milk components, and somatic cell score of dairy cows in Ragusa and Vicenza area, focusing on those variance components that are potentially useful for management advice to dairy farmers. Non informative records were extruded and the final dataset comprised 1,080,637 test-day records from 42,817 cows on 471 herds. Variance components were estimated using the multi-lactation, random regression, TD animal model adopted by NRS. The model comprised four fixed effects and a random herd × test date (HTD) effect. Random regressions were included for herd curve (HCUR), animal additive genetic effect, and permanent environment, using fourth-order Legendre polynomials. HCUR variances for milk and protein production were highest around the production peak (DIM 50 - 150), whereas for fat production the HCUR variance was relatively constant in lactation 1 and decreasing after a peak around 40 - 90 DIM throughout lactations 2 and 3. For SCS, the HCUR variances were relatively small compared to the other variance components. For all the traits except SCS the HTD variance was much lower than the HCUR variances and HCUR over phenotypic variances had a peak around 50-150 DIM and decreased at the end of the lactation to about 0.15 except for the first lactation where they slightly decreased to 0.35. Results for HCUR and HTD variance indicate that the development of management parameters should focus on between herd parameters during peak lactation for milk and milk components. For SCS the within herds variance components were higher than the between herds variance suggesting that focus should be on management parameters explaining variances at cow level.

Key Words: Dairy Cattle, Test-Day Production, Management Curves

134 Waste milk supply and pasteurizer performance on California dairy farms and calf ranches. M. C. Scott, R. E. James*, and M. L. McGilliard, *Virginia Polytechnic Institute and State University*, *Blacksburg, VA*.

Waste milk (WM) can be an economical and viable source of nutrition for young calves, but feeding it raw poses biosecurity concerns. Pasteurization effectively reduces health risk associated with feeding WM. This study was to track effectiveness of on-farm pasteurizers and determine amount and composition of WM generated by 9 dairy farms and used by a 30,000-head calf ranch in Tulare and Kings County, CA. Standard plate count (SPC), alkaline phosphatase, fat percentage, and protein percentage were measured prior to and immediately following pasteurization and at 20 min intervals until the last calf was fed. Farms ranging in size from 530 to 7000 milk cows were visited once in June 2005 and once in January 2006. There were 2 batch, 3 turbulent batch and 5 high temperature short time pasteurizers used on these operations. Standard plate count (SPC) of waste milk before pasteurization averaged 1.6 million cfu/ml, but ranged from 3,000 to 5.9 million cfu/ml. Fat and protein averaged 3.7% and 3.8%. However, fat varied from 1.1% to 5.3% and protein from 2.9% to 4.7%. Pasteurizer performance was evaluated based on SPC and alkaline phosphatase activity. Pasteurizers were effective, deactivating alkaline phosphatase more than 95% of the time, with post-pasteurized SPC averaging 13,000 cfu/ml. Farms using buckets to feed calves experienced higher SPC post pasteurization and during feeding than those using bottles. Five of nine dairies and the calf ranch added additional milk replacer to increase total solids of liquid feed, but only the calf ranch succeeded in increasing total solids. Most dairy farms had sufficient quantities of waste milk to meet the needs of the calf-feeding operation.

Key Words: Pasteurization, Calf, Waste Milk

135 Investigating relationship between protein-fat difference and milk yield of Iraninan Holstein dairy cows. B. Saremi*[1], J. Ghaseminejad[2], and J. Eslami[3], [1]*Education center of Jihad-e Agriculture, Animal Science Department*, *Khorasan Razavi, Mashhad, Iran*, [2]*Animal Science Department of Agricultural and Natural Resources University of Gorgan*, *Iran*, [3]*Animal Science Department of Zabol University*, *Iran*.

Aim of this study was investigating effects of protein-fat difference on milk production of Holstein dairy cows. Milk, fat, Protein and Somatic cell count (SCC) records from North, south and Razavi Khorasan states of Iran (59044 record) were adjusted using days in milk, parity, milking times, year and month of recording. Data was obtained from Jihad-e Agriculture Organization of Khorasan state of Iran, Animal Science section. Protein-fat difference was determined using fat and protein records based on grouping (cows were divided to 8 groups: protein fat differences Less than -1, -0.99 to -0.5, -0.49 to 0, 0.01 to 0.25, 0.26 to 0.50, 0.51 to 0.75, 0.76 to 1.00 and more than 1.01). Data were analyzed based on a completely randomized design. Means were compared using Duncan multiple range test (P<0.01). Results shows that protein fat difference can influence milk yield (P<0.01). Also it has a significant effect on SCC in milk (P<0.01). When milk fat is more than protein (negative groups), it shows that milk yield is lowest and gradually by decreasing fat content and constant amount of protein, milk yield increased (Negative relationship between milk yield and fat percent). When fat content is more than 0.5 percent below protein, again milk begins to reduce. At difference about 0.75, rate of milk reduction get higher. This difference between milk protein and fat is an indicator of acidosis. So 31.03 percent of records show cows that are influenced with one kind of acidosis in their rumen. It can adversely affect milk production as can be seen. SCC has a trend just like milk production, unless most SCC take place at protein fat difference about 0.51 to 0.75. According to these data it seems that efficient use of monthly records which usually exist in each herd are a suitable tool to investigate herd nutrition and may be a good indicator of distribution of acidosis in herds because of the high correlation.

Table and figure 1 Effect of protein fat difference on milk yield and somatic cell count of Holstein dairy cattle

Items	Grouping								
SEM	< -1.00	-0.99 to -0.5	-0.49 to 0	0.01 to 0.25	0.26 to 0.50	0.51 to 0.75	0.76 to 1.00	>1.00	
Milk (Kg)	25.63^{f}	25.97^{e}	26.86^{c}	27.94^{b}	28.95^{a}	28.90^{a}	28.15^{b}	26.58^{d}	0.032
SCC (x1000)	297^{f}	314^{e}	317de	325^{c}	322^{dc}	342^{a}	335^{b}	279^{g}	0.839

Means with different characters are significantly different (P<0.01)

Key Words: Protein Fat Difference, Milk Yield, Somatic Cell Count

136 Best management practices to improve milk quality and udder health in organically-managed dairy herds in Southeastern Pennsylvania. K. E. Griswold*[1], H. Karreman[2], and J. Mylin[3], [1]*The Pennsylvania State University Cooperative Extension*, *University Park*, [2]*Penn Dutch Cow Care*, *Gap, PA*, [3]*Lancaster DHIA*, *Manheim, PA*.

The effects of various management practices on milk quality and udder health in organically-managed (OM) dairy herds in Southeastern Pennsylvania were examined using a combination of survey and DHIA data. Initially, 38 OM herds using Lancaster DHIA services were recruited for the study, but only 29 herds returned completed surveys. The survey consisted of 308 questions concerning herd demographics, milk quality, health, reproduction, nutrition, and youngstock. The DHIA information included monthly 202 report data for 2006. Data were analyzed using PROC MIXED within SAS. The milking procedures model included the fixed effects of wearing gloves (WG), dry wiping (DW), pre-dipping (PRD), fore-stripping (FS), wiping dry prior to unit attachment (WD), and post-dipping (POD). The mastitis control practices model included the fixed effects of using California Mastitis Test (CMT), hand stripping infected quarters (HS), using quarter milkers (QM), culturing infected cows (CIC), culturing infected quarters (CIQ), and milking infected cows last (MICL). The dry period model included the fixed effects of abrupt dry off (ADO), seal teat ends (STE), and vaccinate during dry period (VDP). In milking procedure results, only WG and PRD significantly (P < 0.05) improved milk quality and udder health. Wearing gloves was associated with reduced average actual SCC (122,000 vs 374,000; SE = 70.8), and a lower % of cows with SC scores = 7-9 (1.2 vs 9.2; SE = 2.19). Pre-dipping was associated with reduced average actual SCC (134,000 vs 363,000; SE = 69.7), and a lower % of cows with SC scores = 7-9 (1.9 vs 8.5; SE = 2.16). Among mastitis control practices, only CIC was significantly (P < 0.05) associated with improved udder health. Herds that CIC had a greater % of cows with SC scores = 0-3, and lesser % of cows with SC scores = 5 and 6. In the dry period, there was a trend (P = 0.069) for VDP to reduce the % cows with SC scores = 7-9 (1.9 vs 8.8; SE = 2.8). These results suggest that BMP used with conventionally-managed dairy herds can effectively improve milk quality and udder health in OM dairy herds.

Key Words: Organic, Milk Quality, BMP