KOSOVO

CLUSTER AND BUSINESS SUPPORT PROJECT

Dairy Cow Reproductive Health and Management

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Submitted to:
USAID/Kosovo
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Dairy Cow Reproductive Health and Management

Animal Health Specialist

Kosovo Cluster and Business Support Project

Trip Report: Dr. James Dickey, April 25 – May 24, 2005

Summary

The KCBS Specialists have taken me for 11 Farm Visits to see first hand, the status of the Commercial [>10 Cow] Dairy Farms in Kosovo. Additionally 15 Veterinarians, Professors, Ministry Personnel, Association of Milk Producers personnel and a Bank Official have been interviewed to get their account of the Dairy Industry and learn what they need to help improve the genetic potential of the dairy herd. Three Seminars were presented, two in the field and one in Pristina, where a total of 75 participants exchanged their comments during and following the presentations. Participant lists were compiled by KCBS Specialists. Field notes of those farm visits, and interview notes, are attached as "Notes from Daily Diary".

Observations

Briefly I will summarize my impression of the Kosovo Commercial Dairy Sector as follows. The majority of the Dairies visited and those discussed are composed of Imported Cows obtained in the last 3 years or so. The owners tend to be new and inexperienced. Most owners are selling their calves at a young age (10 days to 6 months) due to expensive and difficult management necessary to raise dairy calves. They are buying or planning to buy imported bred heifer replacements. Some of the older dairymen are raising part of their heifer calves, but few if any males, due to high cost and health management/cost and high mortality.

Reproduction and milk yield are both dependent on nutrition as the most important factor. Health is certainly important, but again, good health is very highly correlated with good nutrition. No matter how high the genetic potential, nutrition needs to be improved to increase milk yield, reproduction and health. The owners and managers most often are choosing to sell the young calves and not raise replacement heifers because they say that they are cheaper to buy than to import. Initial economic calculations by this consultant confirm that heifer raising under the present level of management expertise is more expensive. On the other hand, there are disadvantages to the Imported Heifer Replacement Management System. Recommendations are given in the attached Dairy Herd Reproductive Health and Management Guide to only take advantage of the "less expensive imported heifers" while available, and start preparing conversion to the Total Herd Bred Heifer Replacement Management System. Dairymen will then be ready and experienced to raise their own replacements if the import price goes up, availability stops or exotic disease or adaptation becomes a problem. The stability and strength of the milk market will also influence the viability and choice of both of these dairy herd management systems.

A simple and useful Barn Sheet for Individual Cow Recording of milk production, breeding dates, estrus dates, pregnancy exams and notes of treatments was prepared. That form has been slightly modified in the Draft to include Mastitis Testing. This form will be used by the farmers to record their breeding results.

Seven areas for further training and assistance were identified. Scopes of Work were developed for each of these areas outlining for continuing education, information brochure development and research to help the dairymen directly and through training of Veterinarians and AI Technicians to help transfer much of this management information to the farmers. A brief questionnaire was also developed for gathering information during specialist visits to farms; and it will be a pattern for the research questionnaire. A follow up Specialist Extension Veterinarian with experience in Herd Management and Nutrition would be ideal. As a Veterinarian, he could teach the Local Veterinarians of the importance of their involvement with the total management of the Dairy Herds. His knowledge of Nutrition and Management would facilitate the further Continuing Education of the Vets and AI Techs.

Two spread sheet programs were designed to give a rough analysis of the effects of changing production variables such as reproduction and nutritional levels for higher milk production, as they effect net income from dairy cow herds. A typical dairy herd composition of 100 cows in Kosovo, under present production conditions, is attached to help the user better understand the interplay of the herd. Hard copies of the spread sheets are provided along with electronic copies which will include the active "Spread Sheet Program".

Economic Impact

The economic impact of Dairy Herd Management and Nutrition Improvements, measured as Reproduction and Milk Yield increases for all Commercial Dairy Herds in Kosovo, can be estimated from the results of these Net Income Predictions and statistics from Cargill, 1999; UNMIK, 1999: Dickey, 1999. These reports indicate that there is a potential of about 600 farmers with a capacity for 10 to 12 cows each, or a maximum of 7200 Dairy Cows. If a few dairies with more than 100 cows are added, the total maximum might reach 8000 cows. This would be about 4% of the cow population of 197,655 cows reported by FAO for the Pre-War Years 1990 – 1998 (Dairy Production Sub Sector Kosovo Literature Review in KCBS Office - No reference: 2004).

Therefore, using the Increased Net Income per cow from a 10% increase in Reproduction Rate would be Euro1,520,000 to Euro 2,480,000. And, the additional Net Income increase from a 10 lts increase in Milk Yield would be Euro 1,624,000 to Euro 3,520,000. With improved management and nutrition there is potential for raising Reproduction from 75% to 95% (20% increase); and a potential of raising milk yield from 15 lts to 35 lts (20 lts increase) or more. The Annual Net Income Increase potential from management and nutrition would be Euro 6,288,000 to Euro 12,000,000.

Seminars

Two Field Seminar were presented; one to 15 dairymen participants in the Peja Province on 19 May, and a second to 14 Veterinarians and AI Technicians in Istog 20 May. The Final KAMP Seminar was presented in Pristina to 43 participants including KAMP Members in Pristina on 24 May. Considerable discussion on the two different management systems and Mastitis Testing indicated a strong economic concern at both the herd and marketing level.

REFERENCES:

KCBS/USAID FILES – 2004: Dairy Production Sub Sector Kosovo Literature Review in KCBS Office No reference: 2004

KCBS/USAID Kosovo- 2005: Kosovo Cluster and Business Support Project – Year 1 Work Plan – Oct 2004 to September 2005.

KAMP - 2004: Kosovo Association of Milk Producers (KAMP) Strategic and Business Plan 2004.

CARGILL Technical Assistance - 1999: Kosovo Agriculture and Agribusiness Assessment and Development Program Recommendations. Draft Report. 1999.

UNMIK – 1999: Draft Strategic Plan, Plan for Rehabilitation of the Farming System in Kosovo. November 1999.

DICKEY, James R. – 1999: Assessment of Current Livestock Status of Kosovo. November 1999.

FAO/STAT – 1999: Pre-War Years 1990 – 1998.

NOTES FROM DAILY DIARY

Jim Dickey

Dairy Cow Reproductive Health and Management Specialist

Kosovo Cluster and Business Support

April 25 to May 25, 2005

04-25-05: Depart NY for Airport connections to Pristina, Kosovo

04-26-05: Arrive Pristina, Driver Ekrem Zeqiri took me to Hotel Baci

04-27-05: Hotel to KCBS Office – Met Peter Dickrell, Senior Cluster Advisor; Arben Musliu, Meat Specialist; Zijadin Gojnovci, Dairy Beef Specialist; Ilir Zenelaj, Poultry-Animal Feed Specialist; and Milazim Makolli, Feed Grain Specialist; and Roy Chapin, STTA –Nutrition Expert

Depart for Roy Chapin Nutrition Seminar to KAMP in Gjakova at Dairy Farm of Adem Jetishi with 43 cows of which 27 were lactating (63%); breeds were Simmental in good condition, while the Holstein and Brown Swiss were in fair to poor condition. Dr. Chapin observed that the higher milk producing breeds were apparently being under fed for production level, while the lower milk producing Simmental were able to fatten on the same ration. This was a good example of the need to feed each cow according to her milk production level. There was about 20 calves and young growing heifers, a bull or so and a cow with a big swelling with drainage on her back leg. The cause was not determined.

The base roughage ration was grass hay and a grass/legume hay-lage (high moisture in plastic cover). Good facilities, concrete silage silos, hay storage, equipment and nice extended family home. Dr. Chapin had visited this Dairy 3 weeks before and gave a ration change recommendation which increased production from 16 lts/cow/day to 20.5 lts/cow/day, or from 350 lts to 450 lts from 22 cows. The new production level at EU$0.30/lts would give an annual gross income of EU$49,275. Making some assumptions, we can estimate that animal sales income from culled male calves, heifers and cows would be approximately EU$11,822. The GRAND TOTAL ANNUAL GROSS INCOME would equal EU$61,097.

Feed cost per lactating cow would be EU$2.20/day or EU$48.40/day for 22 lactating cows, which converts to EU$17,666/year. If we assume EU$1.10/day/dry cow for 21 cow and 1 bull, the daily cost would be EU$24.20 or EU$8,833/year for Dry cows and bull. The 20 head of calves and heifer feed cost will be assumed to be half the dry cow or EU$0.55/day/youngstock would be EU$11.00/day or EU$4,015/year. Total feed cost would be EU$30,514/year. Assuming that feed cost is 88% to 75% of total, the total cost would be approximately EU$34,675 to EU$40,685. That gives a return of EU$26,422 to EU$20,412 for management and capital. This is after the improved production resulting from Dr. Chapin's improved ration for 3 weeks. Higher milk yields and holdover benefits of higher reproduction should improve the return is subsequent years. See attached list of KAMP PARTICIPANTS to be provided by Zijadin. *******

Visited second Dairy Farm of Pal Raja with 8 Simmental cows, 5 of which were in lactation (63%). Production was 16 lts/cow plus calf nursing. The farm size was 10 ha and had a swine operation with 3 pregnant sows and 9 weaned pigs.

Visited third Dairy Farm (New) of 3 ha owned and 20 ha State Lease which was owned and leased by Jeton Kuksi, brother and father who had been an official in the government or was employed in a government facility. They just purchased and imported 20 pregnant Swiss Heifers and 1 bull. One cow had a calf of a few days and one had aborted and was crippled due to transport injury. He said the price was EU$27,000 for the 20 cows and one bull or $1286/head. His new barn of 27mtX15mt (405 mt^2) cost him EU$30,000 to build himself. Given his personal supervision and labor input, this is not far from estimates of Basic Barn construction costs of EU$100 to EU$150/mt^2 provided by the KCBS Building Specialists. Now he will equipment it with coolers and milking machines he bought "used" in Switzerland for EU$3,000. There are other expenses necessary before cows come into production.

They are using a loose stall system with an outside exercise pen which is recommended for more clean and healthy environment and it makes heat detection easier if they should choose to use AI later.

Visited the State Dairy Farm at Foshekosovo where they had about 50 cows of Holstein (Red and Black), Brown Swiss and Semmintal. All were in relatively poor condition, however, Roy said they had improved with his ration recommendation. Management appeared to be poor. The Swiss are no longer Associated with the farm as they were in 1999, when management was improved and shortage of Dairy Feed was resolved for their term of occupation. We return to the KCBS Office at 6:00 PM.

04-28-05: I met with Peter, Arben and Zijadin for orientation: Concentrate consultancy on Commercial Dairy Farmers of 15 cow or larger and those of 5 or larger that have potential of expanding; Work toward Grade A Milk production to sell at EU$0.30 to 0.33 while Grade B is selling locally for EU$0.25; promote AI through training and provision of superior semen for increasing production potential of pure and crossbred dairy cattle; additional consultants to work with nutrition, animal health, AI Training; involvement of both private and State Vets of Ministry of Ag; Identify other Problems including economic comparisons; Zijadin is responsible to help the KCBS President, Dr. Brulli to help complete administrative steps required before payment for activities can be released. Arben will be responsible for facilitating Dairy Farm visits for me and introduction to key players in the Dairy Subsector.

Peter emailed several documents for my review and orientation. I met Chief of Party, Martin Wood, briefly in preparation to attend the Nutrition Seminar.

Attended Dr. Roy Chapin's Seminar to KAMP and USAID at down town restaurant in Pristina. There were 30 participants at the Seminar including KAMP President, Dr. Brulli; the largest Dairy Farmer, Qerim Halilaj, with 110 cows and projected to 210 soon; Tim Hammann, USAID Private Sector Advisor; Martin Wood, KCBS/COP; Peter Dickrell, Senior Cluster Advisor; Zijadin, Arben and dairy producers. Roy pointed out that Rumen Degradable Protein (RDP) or Urea will produce a maximum of 20 lts/cow/day. While Urea is valuable with low quality forage, it is of no value with good grazing or other good sources of both

RDP and RUP (Rumen Undegradeable Protein). Soybean Meal provides both and is superior to Sun Flower Meal. Peter noted that Qerim Halilaj is producing 3300 lts/day with 110 cows or 30 lts/cow/day. He estimated that 2 laborers should be needed per 100 lts/day of production. One of the KCBS Specialist reported that Qerim has 25 laborer for 3300 lts/day of production or 132 lts per laborer or one laborer per 264 lts daily production.

Departed with Peter and Milazim Makolli, Feed Grain Specialist, to visit two farms in Besian, Podujeva. Dairy Farmer, Sadir Haziri, and two sons had 7 lactating (54%) and 6 dry Semmintal cows and young animals. The AI Technician was breeding a cow but does not do pregnancy testing according to the owners. They are crossing with Holstein for higher milk production. They were interested in pregnancy determination since they had to re-inseminate up to 4 times before conception or changing to natural bull service. They said the AI Technician did not do pregnancy testing (palpation). They were feeding a concentration mix of 250 kg corn, 150 kg broken wheat/weed seeds and 6 kg premix with mature grass/legume hay. Milk production was reportedly 18 to 20 lts/day/cow and was being sold on the local market at 0.29/lt for less than 150 lts or 0.27/lt for equal or more than 150 lts/day for 4.1 Butter Fat milk.

We visited a second farmer who was planting forage trials with corn varieties and different fertilizer levels in cooperation with the organization that Milazim formerly worked for. We did not see any cattle or livestock at this farm.

04-29-05: Moved to apartment at KCBS Office and started organization and supplementation of information gathered in the field.

Met with Valdet Osmani, Construction Specialist, and Burim Meqa, Wood Processing Specialist, to verify and supplement costs of building barns and houses obtained from Dairyman, Jeton Kuksi, in Gjakova.

The Specialists' estimates of barn construction cost was EU$100 to 150/mt2 compared to EU$74/mt2 plus labor/supervision from the farmer. In the US we estimate barn cost at EU$60 to 85/mt2.

(An aside, house construction is estimated by the Specialist to be EU$200 to 350/mt2, but sell for double that per /mt2, which is comparable to homes in the US. Apartments are more expenses in Kosovo. Size of homes range from 200 to 500/mt2 and apartments are 40 to 100/mt2.)

Discussed previous farm visits and anticipated field and Dairy Sub-sector personnel with Zijadin and Arben. Zijadin suggested meeting with some of the Private Vet Service providers. Arben asked me to call William Gardiner, Kosovo Vet Services (Ministry Advisor) to ask for a meeting. I called Gardiner, but he said that I should call Dr. Bafti Murati, Chief of Animal Health Section, Kosovo Veterinary and Food Agency, Ministry of Agriculture, Forestry and Rural Development. Arben called Dr. Bafti and made an appointment for 11:00 AM.

Met with Dr. Bafti Murati to learn Official Ministry Activities: He is in charge of Regional Inspectors (overseeing AI Vets); Border Control, and Disease Prevention. They are vaccinating for Rabies, New Castle, Anthrax, Brucelosis, and Classic

Swine Fever. The Diagnostic Lab is testing for Blue Tongue, Brucelosis, New Castle, Avian Influenza and Aftosa (Foot and Mouth).

We inquired as to State and Private Vet activity and knowledge of pregnancy testing. I understood that there may be some activity, not general, but they do semen testing. However, there was an FAO Pregnancy Testing/palpation Training Course in 2000 through the Agricultural University. It covered pathology, AI Hygiene and Pregnancy Testing. He is a lecturer at the University and taught for FAO. He said that palpation was included, but I am not sure of his response regarding practical demonstrations and student practice.

Following the meeting with Dr. Bafti we met with Bingie Halili, Field Milk Quality Inspector, Ministry of Agriculture, whose program is just about to get started. He will be testing for Butter Fat, Hygiene and somatic cell counts (California Mastitis Test).

Arben and I discussed pregnancy testing by palpation and the options for training. The traditional system of the farmer watching for signs of estrus cycles (heat periods) can not be discounted and should be encouraged along with more loose stalls and open exterior pens for cows.

KCBS Staff Meeting called by COP, Martin Wood. No regular schedule for Meetings. Attend if at Office. Drafted a Dairy Farm Information Sheet for completion by Consultant or Specialist during each field trip. Initiated preparation of Record Sheet ideals to possibly supplement the one prepared by the Specialists. I need to get a copy of the one being used to see if any changes are indicated once discussed with the Specialists. Arben, subsequently sent one which is sufficient for now.

04-30-05: I met with Peter in the Office to discuss work plans for long weekend. Peter was headed for 3 days in Macedonia. I wrote up Field Trip Notes; and did some economic gymnastics on the cost/return of milk production at different production and price levels. This will be an extension of the good work Dr. Chapin has just completed. I corresponded with Roy regarding use of has program and correction of one of the links. He has emailed an explanation and will send corrected program for distribution in the office within the next few days.

I pulled some record sheets off the internet to give some ideas to possibly add to the one developed by the Specialist.

05-01-05: I continued development of economic evaluation of the dairy production management levels, finished Farm Visit Data Sheet and searched for more record samples. Peter offered some good feedback on the economic evaluation, as his Macedonia trip was cut short and he returned to Pristina.

05-02-05: Revised Farm Visit Data Sheet; Revised Prediction Model & Assumptions; Outlined Prediction of Cost and Return Program; Drafted Assignment Schedule; Studied needed summary for Chapin's LAMP Profit Tech for Dairy Sector; Noted possible need to revise Dairy Cow Production Record Form; Reviewed SOW with Peter; Emailed above documents to Specialists – Peter, Arben and Zijadin for review and comment.

05-03-05: The meeting to discuss the Bank's needs for dairy income predictions was postponed. Arben planned field trip to Semen Provider and Farm later today. Peter briefed me on Tony Evangelo, Sale Manager, World Wide Semen, planned visit end of May.

Field trip: I traveled with Arben to Gjilan (about 35 km Southeast of Pristina) to meet Dr. Zija Idrizi, DVM, Owner Manager, Fauna Ndermarrija Veterinare, Semen Importer/Distributor. They provide Vet Service, Vaccine, Medicine, Premix, Liquid Nitrogen (imported from Macedonia), equipment and AI Service. He has 2 Veterinarians and 5 AI Technicians who do the Vet Service and AI Service. Dr. Zija reported that the company provides 70% (27,000 doses) of all the bull semen used in Kosovo, which would calculate to be 38,600 or one dose for about 20% of the reported numbers of cows. Semen is imported from several countries including Switzerland, Spain and Germany.

The wholesale price of semen to Vets ranges from Euro1.5 to Euro 4.0. Reportedly the price does not always reflect the genetic quality of the semen, as some of the semen is cheap because it is subsidized. If inseminated the semen price is Euro5.0 and the AI Service ranges from Euro5.0 at the lab to Euro12.0 depending on distance to the farm. The AI Tech returns three months after last insemination to palpate for pregnancy test which cost the farmer Euro5.0. Heat (Estrus) detection can be a problem and he said that the AI Tech or Vet is not always sure of the AI success because bulls are often available. However, he calculates conception rate to be 70%, between the AI and the Bulls.

Dr. Zija recognizes that some AI Techs are good and some are bad, but he did not think many of them needed additional AI or Palpation training. However, we may want to expose them to some of our proposed Nutrition and Herd Management for Improved Reproduction and Conception Training Demonstrations. His biggest concern was the lack of Semen Quality Testing after it leaves the Exporter (his source). That is, he has no equipment or technical expertise to test his semen at any stage from receipt at the airport to insemination of the cow on the farm. I was surprised, and asked if he at least did a simple microscopic evaluation of the motility, normality and viability of the semen, if not the concentration, which should be relatively consistent in frozen semen. He said that they did no Testing whatsoever. We promised to investigate the new technology and get some recommendations for acquisition of the equipment if not locally available such as a microscope.

Upon return to the KCBS Office I emailed Tony Evangelo, World Wide Semen, regarding such Semen Quality Testing equipment. He emailed a reply expressing his belief that the Testing is little changed from the microscope, stains and grid counter slide as was long ago. However, he is getting a colleagues opinion who is testing regularly. He will follow up and advise.

We visited the Dairy Farm of Fatos Ahmosi at Novo Brdo (between Gjilan and Pristina, which is a low mountain/creek valley pasture areas with much beauty). Two young men (apparently Brothers) were taking care of the 15 Simmental cows imported from Serbia as bred heifers about 6 to 8 months ago. Fourteen cows were in lactation and one was expected to calve in 2 months. They had 9 heifer calves and 5 male calves one to three months old. One male calf had a respiratory infection and had been treated with antibiotic by the local Vet. He was in a

separate pen which was contiguous to the other calf pens, but should have been more isolated to completely avoid contact or even close contact to limit airborne infection of the others. The calf only had non fresh milk to drink and some dry concentrate. We suggested fresh water be given to try to avoid dehydration. If necessary the Vet should give liquid intravenously. The calves were reportedly receiving 5 lts of milk each, leaving 4 lts of production for sale or use.

Milk production was only 120 to 130 lts or 9 to 10 lts per cow/day with 2 kg of feed. Arben selected a proper ration for the Dairy from Chapin's Rations and recommended increasing to 4 kg per cow two or three times a day. The barn was a large (approx 15 mt X 30 mt) free open stall feeding separated on each side of the barn and two loafing pens outside to get sunshine. The cows and the calves and one young bull had large water troughs in each pen. Cow were bred by AI to Simmental Semen or to the 9 month old Simmental Bull. (Subsequent reports by phone indicate that the production went up to 200 lts before one week. And, within 10 days the production was up to 220 lts or nearly 16 lts/day, an increase of 6 lts/day.)

05-04-05: Email responses were received from Tony Evangelo and Roy. In answer to my inquiry Tony requested Semen Quality Testing info from a colleague which he will forward and follow up on his visit here at the end of month.

Roy sent corrected Ration Program (FMMM) and added a Non-Feed Costs Sheet (Only for testing, not ready for use). This is not for distribution as it is under development and trial use by the KCBS Team at this time. We should feed back any comments, additions, errors or changes that we think would improve the performance and utilization of the new addition to Roy's Program.

Arben and I met with Dr. Korab Gunga, DVM, Private Veterinarian in Pristina with a Large Animal and Small Animal Practice (Tel: 044176653). His AI Service volume averages 900 doses/year which he buys from Fauna delivered from Gjilan. He gets about 65% conception. Farmer detection of estrus and their ill advised wish to inseminate the morning they call instead of waiting until 3 to 5 PM limits conception. Dr. Korab recommends waiting to be sure it has been 12 to 24 hrs from onset of estrus. He recommends that he palpate no earlier than 42 days after last insemination.

His Vet services include Vaccinations of small animals and large animals. Biggest Problem is Black Leg (Clostridium) which has no cure – only preventive vaccination – with very high mortality. Brucelosis may be a problem is some farm animals, but I understand they do have a testing program to better define. I have to inquire more into the exact requirements. He thinks there are venereal disease problems transmitted by bulls, but he has no diagnostic evidence. He treats with antibiotics and local disinfectant when he suspects infection. Nutrition is the biggest problem for reproduction in his opinion.

We went to the University of Pristina, Faculty of Agriculture for a meeting with Prof Dr. Skender Muji, Vice Dean. His Prof of Reproduction was on a study program, but Dr. Skender was very informative and assured us that Training Short Courses in AI, Palpation and Semen Quality Testing could all be arranged through the farmer extension program. He did not have the cost figures, but his description was reassuring and I suspect that the cost would be reasonable. We may want to consider additional training for some of the AI

Technicians/Veterinarians that work with the KAMP Members or train the farmers or one of his employees. Dr. Skender note that they used slaughter house reproduction organs props, drawings, lectures and hands on practice, with 10 cows kept at the University for this purpose.

Dr. Zija, Fauna Owner, suggested farmer training and on farm storage of semen, but I believe it would be better to give additional training to the AI Techs and Vets.

05-05-05: Received an email response from UF Prof. Dr. De Vries re my request for Barn Record Form Samples.

Arben, Peter and I had a brief discussion of the Milk Cow Cost and Return information that the Bank may request and what we may be able to provide in addition to the ABU data prepared by Arben on a per cow bases. I am working on a simple spread sheet program to start with Roy's Dairy Ration Program Results on feed cost and Milk income, then include non-feed costs and cull animal income to give a prediction of the more complete picture for the Bank. Roy is also working toward this end. We will not have anything concrete for the Bank meeting Friday, but we hope to get some feed back from the Bank to give us better guidelines to produce what will be most helpful to facilitate credit for the KAMP Dairymen.

Departed with Arben for Peja to meet with Dr. Turhan Nila, DVM, Private Vet, and part-time specialist with some of the AID Programs. He is a very enthusiastic supporter of KCBS and KAMP, with special concern for "Small Family Dairies" that do not have the resources to assure Vet service as needed. *

Dr. Nila's first story was of a family dairy cow lost to simple "Bloat" from overeating green alfalfa, and his unsuccessful effort to explain "rumen puncture" over the telephone because he was isolated without timely transportation to the farm. The family's only cow died, to his obvious frustration. He described his intent to make pictures, diagram and dialog to explain in a simple brochure how a farmer can relieve future "Bloat" problems which are common in the spring, but relatively easy to treat if don't early. Another Brochure should be developed for distribution to Vets and Farmers for proper "Hoof Trimming". *

He said that there were no special disease problems, just the common ones the worldwide for which the 15 Peja Vets minister the general health needs, around the Biggest Problem of Nutrition and low reproduction. Mastitis is common, but in being somewhat contained with washing and disinfectant of utter and teats. Preventative teat injections at "drying off period" is sometimes practiced, but not enough. Some reproductive disease appear to be transmitted by natural service, but this is not confirmed. Local disinfectants and Antibiotics are sometimes indicated.

An average of 300 AI Services (with a high of 500) are delivered by Dr. Nila with a conception rate of near 60% if he palpates and eliminate those wrongly identified as in Estrus by the farmer. Heat ID is a major problem with AI conception. Most AI Techs and Vets who do not palpate in advance, just wait the semen in a closed vagina with a resulting conception of 50 to 60%. He buys his semen from Vet Premium and Fauna for Euro 0.60 to 2.50 (high of Euro5; and he charges Euro10 – or Euro5 per service to small family dairyman. Repeat service

charge is Euro5. He palpates for pregnancy at 2 to 2.5 months. The breed preference was Simmental for easier management for the farmers.

He favored training for AI Techs and Vets in Nutrition and Management so they could be a conduit for KCBS recommendations and the farmer. Dr. Nila would cooperate with production of Brochures on: Bloat; Hoof Trimming and Reproductive Health and Management.

Visited Rudina Dairy in Prizren who Roy mentioned in his report of 20 April 2005. This was a follow up visit for Arben to deliver Dairy Cow Rations to the owner, Mr. Orus Krasniqi. We also checked on the 11 Beef Calves he is fattening on the ration provide by Dr. Roy Chapin following his 11 March 2005 visit. Arben presented the rations to Mr. Krasniqi, but no question/answer exchange was indicated. Arben started asking questions to complete the Dairy Farm Data Sheet, but Mr. Krasniqi took the form and said he would complete and mail it to us. I hope to receive it before my departure, but it is most important to the Specialist for Specialist/Dairyman Consultation.

Unfortunately, Mr. Krasniqi chose not to walk through the barns with us to observe the cattle and answer our questions which would surely arise during the tour. In fact, we found conditions very poor, with most of the Holstein in less than 2 condition and the Brown Swiss and Simmental in not much better condition. They were in the process of receiving the cows in the milking parlor, but no milk yield data were obtained. The Farm Vet, Dr. Rogova was not there. The 100 or so Lactating Cows were in one barn of approximately 150 mt X 14 mt with a capacity of 150 to 200 cows. This is a former State Coop Dairy Farm with 3 more such barns. He rents all or part of 3 or more barns, while the German GTZ has an office in one. We observed 11 beef (Simmental) calves, and a few very poorly managed and poorly fed replacement stock, including possibly 25 calving, about 10 Brown Swiss yearling heifers, 15 Holstein yearling heifers and 18 Pregnant Holstein Heifer (probably purchased bred). Some of the young calves had no water, only dry feed – and probably received some milk of a type. However, they were skeletons, with very little hope of reaching productive age. If they do live they will never reach their genetic production capacity. Movable outdoor hutches would be an improvement. **There was considerable need for management improvements.**

05-06-05: Reviewed Milk Income information prepared for meeting with Raifeisen Bank personnel later this morning.

Peter, Arben, Zijadin, Valdet Osmani and I met with Diana Berisha, Production Development Manager, Raifeisen Bank to discuss our cooperation with the Bank to help meet their requirements to qualify KAMP Members for loans. The Dairyman will need a “back up organization” like KAMP for some type of production/return verification, possibly including Net Income Estimates as Arben had prepared and Net Income Predictions which we are preparing.

Returned to Office to work the remainder of the day developing the Net Milk Income Prediction Program discussed with the Bank.

05-07-05: Reviewed and revised the Net Milk Income Prediction Program in preparation for discussion with Peter, Arben, and Zijaden as a potential tool to help the Bank

evaluate loans. Wrote up field notes and discussed the weeks activities with Peter and reviewed some plans for next week.

Reviewed some of the possible recommendation ideas coming out of the field trips and visits with private and government personnel.

05-08-05: Received Roy's revised MMM and compared with the Total Herd Milk Income Prediction Program. When I used the Purchased Heifer Replacement Option the resulting Net Income per cow is very close.

Roy had some good suggestions for the Prediction program and identified several errors which I corrected or eliminated. I spent much of the day correcting and testing the Prediction Program to the point that all the variables worked consistently with logical results. I'm sure that Roy can improve on it, but for now, it should give very close estimates of the influence of each of the management variables we need to measure.

05-09-05: I spent the morning reviewing and updating field notes in preparation for writing SOWs, Proposals and for the Final Seminars.

I joined Arben and Zijadin to meet with Raifeisen Bank representative, Diana Berisha, to present the Milk Net Income Prediction Program and Arben's Cost and Return Computer Program to help them decide what they need to help qualify KAMP Members for loans. We had a very productive 4 hours giving them both "test runs" and discussion. Dianna presented the banks program on Loan Amortization. Dianna seemed to favor the adaptability of Arben's program for the bank's use. She will study them both and plan to meet again.

05-10-05: I received more information where to order microscopes and Hemocytometer for Semen Quality Testing. The addresses and information has been emailed to the Specialist so they can follow up on my recommendation to purchase lab and field scopes with Hemocytometers for KAMP.

Zijadin arranged a meeting with Dr. Brulli (?), DVM, President of KAMP, to discuss his farm and the needs of KAMP at the KCBS Office.

Dr. Brulli explained the KAMP proposal to contract Vet and AI Service for a set annual fee with the private Veterinarians. I conveyed my understanding that "Farm Vets" or "Set Contract Vets" felt they are under paid, while the Dairy Farmers felt that the "Private Vets" are over paid. My impression is that there must be a compromise to make the security of a Vet Contract be worth the Vets accepting a lower annual income.

He assured me that Brucelosis is not a problem in Kosovo cattle, but that Nutrition, Reproduction, Mastitis, Hoof problems and environmental adaptation of the imported cattle are significant problems.

Arben and I went to Prizren to visit Dr. Kreshnik Rogova, DVM, Private Vet, in the Regional Vet Clinic with 5 other private Vets (Tel 044-140-409; email: kreshnikro@yahoo.com. They provide about 2000 AI Services annually with 55 to 60% conception for each AI. He estimates that 1300 calves result from AI, or 65% total Conception. He estimates that 80% of the commercial dairy cows are bred by AI, with up to 3 AI's each. First AI cost Euro 15 plus transport, while the second & third are Euro 5 plus transport. Palpation cost Euro 5 to free for regular

customers. Semen is Tested for Motility only, since his Microscope is very small and of limited capacity. He could use some better equipment for what he is trying to do.

Dr. Rogova sees nutrition as the major problem for reproduction and production, with special concern for Vitamins and Minerals which he stated are usually solved with Pharmaceutical Doses of Vitamin and Mineral Pills. We suggested that total Ration Balance of these, plus Energy and Protein may be more effective. He agreed, but left the impression that **Continuing Education, such as could be developed to familiarize them with Chapin/KAMP Rations would be useful.** He also mentioned hormone problems for reproduction in cows producing 20 to 25 lts and more. Young cattle are often not vaccinated as per State Recommendations and diarrhea and pneumonia are major problems with calves. He estimates that 70 to 80% of the Commercial Dairy Cows are imported. Very few bulls are used for breeding service on the Commercial Dairies. Dr. Rogova, outlined a very good young calf feeding program, very similar to common US Extension Service recommendations. However, when I asked him why this program was not being followed by Rudina Dairy Farms, he admitted that the owners did not always follow his recommendations.

Dr. Rogova is the Farm Vet for Rudina Dairy Farm. As we visit more and more Veterinarians, we learn that there is little difference between those called "Private Vets" in a private office or in their home; and those "State Vets" with their office in the Regional Vet Clinic. They both contract for Vaccination and other Official Government Services; and they both practice Private Service to the Farmers. I understand that both pay rent for the facilities and both receive donor help in the way of vehicles, Semen Storage/Transport Nitrogen Tanks, etc. Apparently any plans for providing Continuing Education, Semen Distribution or Equipment should be provided without this discrimination.

05-11-05: Peter met with me, Arben and Zijadin to finalize my last 10 days of work, including two Field Seminars and the Final KAMP Seminar in Pristina, since he is leaving on an assignment for one week and will only be here for the last 2 days of my assignment. The Veterinarian KAMP Service Contract idea was discussed briefly and recognized as having both pros and cons to consider. Peter noted that I should prepare a SOW for training (Continued Education) for vet through KAMP with emphasis on nutrition and management. I promised to have my Power Point Presentation on Dairy Herd Reproductive Health and Management Guide for Commercial Dairy Herds by Monday 8:00 AM. Zijadin is to relay the Presentation to the Translator and reproduction department to prepared the Albanian Power Point and Hard Copies to past out at the two Field Presentations Thursday 19 May and Friday 20 May, as well as Tuesday 24 May for KAMP Presentation. Zijadin will review the Presentation and make any suggested corrections or changes as the translators are doing the translation. When Arben returns from the Fair, he will review the Presentation and make any last minute changes and question me for full understanding of the recommendations and data.

Arben and I met with Dr. Henrik Nulleshi, State Vet in Peja Clinic, who works with 3 other Vets in the Clinic. There is a Head Vet, but they seem to work somewhat independently with their own equipment. Dr. Henrik gave us the best briefing comparing State and Private Vets. However, he did judge that the State

Vets were better, as you may have expected. They do both State Vaccinations, etc. and Private treatment and AI. The 4 Vets breed about 360 cows annually with 80% conception. Their semen source is Fauna. They vaccinated 900 cattle along the Border, as well as all the dairy herds that request the service for Black Leg and Hemorrhagic Septicemia.

The major problems he mentioned were: Education of Dairyman; New Owner lack of information; Nutrition; Mastitis and Semen Quality. He does treat Mastitis clinical cases and then at Dry Off Period if farmer request. Farmer can do Dry Off Treatment for Euro 4, while the Vet will charge Euro 10. He asked the solution for cows continue to reoccur. I advised that they should be sold for slaughter. He does Semen Quality Test when microscope is available.

Met with Dr. Jeton Muhaxhira, DVM, Private Vet in Gjakova. He has operates a Vet Pharmacy in his office. He explained that he and his brother Valon Muhaxhira, DVM, work together doing both Government contract and private service. The Gov Contracts are mainly for Black Leg and Anthrax vaccinations along the border. Private AI Service provided for an average of 350 per year with 65% to 70% conception. The charge is Euro 15 for first and Euro 10 for second (next free if called). Palpation is Euro 5 if requested. Semen is purchased from Fauna which he said had poor quality semen (but had no test. The biggest reproductive problem is nutrition, followed by poor Estrus detection and subclinical Uterine Infections (not confirmed with test). He treats these with irrigation with Iodine and other topic medication, then does AI service at next estrus. Mastitis is a major problem due to poor hygiene, lack of washing with disinfectants and dipping teats and cups. He treats clinical cases with antibiotics and Dry Off Treatment: Oxitocin injection to milk cow dry, then injection of topical medication into the teat, with repeat 12 to 20 hrs later.

05-12-05: Preparation of Seminar Presentation

I went with Arben for visit with Dr. Jhavit Bytygi, DVM, BS & MS from Belgrade and completing his PhD in Albanian. He is from Istog, but we met him between here and there at a Training Course location. Istog is reportedly the biggest commercial dairy area. They have year-round and seasonal health problems. His PhD research indicates that 36% of his treatments are for reproductive problems, cause equally by nutritional and pathological sources.

He did 900 AI Service in 2004 with 70% conception. Palpation is only done on request which most commercial dairies do. The charge is Euro 12 for AI and Euro 5 for palpation. He tests the quality of semen, but did not indicate any problems. Estrus detection is a major problem, especially with imported cows with high milk yield and insufficient nutrition. Need to balance nutritional needs.

Mastitis is also a major problem. When a dairyman reports one case, he test all cows with California Mastitis Test, then treats all cows at end of lactation with Dry Off Treatment. If he treats Clinical Cases the first day of Mastitis, the cure is 100%, but if it is 2nd or 3rd the results are less successful. The Dry Off Period Treatment consist of Oxitocin injection for milk let-down; milk until dry; then inject topical antibiotic into each teat; and inject antibiotic intramuscularly. The Teat injection should be repeated in 12 to 20 hrs for best results.

05-13-05: I gave Peter the First Draft of the Seminar Presentation on Dairy Herd Reproductive Health and Management Guide for Commercial Dairy Herds for him to review before his departure. He offered several good suggestions which have been incorporated. Additional slides have to be added for Total Management, therefore I will have to rush through the headline topics and leave the participants (KAMP Members) to refer to the hard copy "Guide" for details.

I worked the remainder of the day revising and completing the Power Point Presentation so Zijadin could have it Monday morning to forward to the translator.

05-14-05: I edited the Seminar Power Point Presentation, made changes to improve the material, then emailed it to Zijadin and other KCBS Specialists to be reviewed and forwarded to Translator.

05-15-05: I reviewed Field Notes and updated in preparation for writing proposals and final report.

05-16-05: Prepared SOW for Local Consultant Recommendations. Met Dr.Dan Undersander, Forage Agronomist, U of Wisconsin on two week consultancy. Provided Chapin report and other Project Documents given to me on arrival.

05-17-05: Met with Mr. Qerim Halilaj, Ag Eng/Premium Vet Co-Owner/Dairyman Tel: 044-131-404 and his partner/Co-Owner, Dr. Fadil Sadikaj, DVM .Tel: 044-124-742 All the Dairy Herd is imported for farm production and/or sale to other Dairymen. Forty Seven to fifty cows are lactating and the other 60 to 70 Imported Bred Heifer of Red and Black Holstein and a few Simmental Heifers and bulls for resale.

Milk Yield before starting the KCBS/KAMP Ration Recommendation was 16 to17 lts/cow/day. Now it is 24 to 25 lts/cow/day. They are leasing a 600 ha State Farm at Istog. Presently 450 ha are being cultivated for corn for silage (150 ha), and the remainder in forage crops and pasture. Three milk cooler/storage tanks of approx 1000 lts were being used for storage, apparently for pick up by the milk plant.

All calves are sold at 10 days of age after colostrums feeding. Small farmers pay Euro150 for 10 day old calves to be put on nurse cows and raised for replacements or males for home consumption. Mr. Qerim and Dr. Fadil judged that they could not grow them at a cost that would compete with Frozen Imported Meat at Euro 2.00/Kg. And, they said imported Heifers were cheaper than growing their own.

They sell semen, medicine, premix, Vet Service and imported cattle. Plans are to activate the large feed mill on the State Farm and provide rations to other producers. Financing for present imports has been through Raifeisen Bank at 15% interest for 3 years (?), with a maximum of Euro 100,000. Additional financing will be necessary to expand as they have outlined above.

Primary problems have been nutrition, reproduction and Mastitis, which has been reduced with milking three times a day.

Dairy Farm at the Village of Kegebollo near Serbian Border (30 minute walk), owned by Mr.Ali Mehmeto and his brother. Mr. Mehmeto is a member and President of a Milk Collection Coop and a Mushroom Coop; and he is a board member of KAMP. He has only 8 cows (4 lactating and 4 dry), 4 to 6 heifers being bred, and 13 growing stock of Busha, Simmental and Holstein Breeding. The cattle are on pasture in the day, with hay & Wheat Bran fed at the barn morning and night in the summer plus corn in the winter. Milk Yield for the cows was 18 to 20 lts/cow/day. He had 22 cow before the war when he was burnt out and left the country to the US for about two years. Mr. Mehmeto intends to increase his cow numbers to 22 again on the 120 ha which has been in his family for 3 generations. Only forage crops were mentioned, but I assume that the Mushrooms growing in the forest make be his cash crop since he is a member of the Muchroom Coop. The mix of crop, pasture land and forest was not learned. There are some interesting old homes/cabins as old as 300 years and have a mix of history and family memories.

We visited the Milk Collection Center of the Coop with a 1000 lt cooler/storage tank in the State Vet Clinic Building where dairyman bring milk in un-refrigerated milk cans. They reportedly collect 970 lts/day from 10 farms, or 50% of their milk. The village Representative treated us to drinks in the little café and gave us the history of the village back to the Romans. He said that the transport cost is the biggest problem, which they hope to solve by buying a truck and two more collection centers with financing or grants from the Government or donors.

05-18-05: Reviewed and edited the SOWs prepared previously and prepared to depart for Istoq and Peja to view Dairy Farms with Dan Undersander.

We departed at 10:00 AM for Istoq and visit the Premium Vet Dairy to see the cattle and facilities that Mr. Qerim and Dr. Sadikaj had described yesterday in our meeting. We saw cows recorded at 50 lts./day, but their condition was slipping. Dr. Undersander felt that the overall condition was about normal. I would hope that some extra high energy concentrate for those high producer was slow the loss.

Dan make a good visual survey of the “feed in” and “feed out” (manure) and pointed out to the owners how they could be read the signs of good and bad nutrition and especially forage Euro 0.90 less bottle cost of Euro 0.10 for a net of Euro 0.40/lts. His wife seems to be incharge of the marketing on the “Green Market”.

Dairy Farm of Mr. Dukagjin Deda in Peja Province not far from Istoq. He and his wife, who is very active with the dairy operation, have 21 lactating Simmental cows and 8 dry cows or 72% lactating. They are feeding as per KAMP Ration and have increased from 470 lts to 500 to 550 lts/day for 21 cows. That is, MY went from 22 lt/cow/day to an average of 25 lts. Each cow is fed 6 to 10 kg of Ration according to her production.

The management is Total Management of Herd Bred Replacements, after having bought 25 imported heifers in 2002. They are saving Replacement Heifers now and selling all males at 10 days of age for Euro 180, along with some heifer calves. They sell bred heifers for Euro 1250. He is using AI to breed to Simmental, but wants to buy Superior Semen directly from Fauna. He says he is trained and confident to AI his own cows, but it is illegal. They have a Young

Bull purchase for Euro 1400 with Dam production of 9500 lts and mix breeding of 65% Holstein, 25% Simmental and 10% Swavete?.

All their milk is stored in a 1000 lt cooler/tank and milk is bottled fresh in new 2 lt bottles, sold for Euro 0.90 less Euro 0.10 for the new bottle, leaving a net sale price of Euro 0.40/lt.

05-19-05: Presented the "Dairy Herd Productive Health and Management Guide" field seminar to 15 participant Dairy Farmers. The Dairy Farm of Mr. Dukagjin Deda in Peja Province near Istoq hosted the seminar. There was considerable pros and cons expressed regarding the Imported Heifer Herd vs. Total Herd Bred Heifer Management. The interest in Mastitis cure seemed to be the concern rather than the needed concern to test, treat and cull unresponsive cows. The big concern expressed by one older dairyman was the need for more affordable loans.

Afterward, Dr. Dan Undersander demonstrated good silage characteristics, saying that Mr Deda's silage was the best he had seen in the area. We went from the farm to Ministry of Agriculture in Peja for Dan to learn more of the forage analysis capacity. We spoke with the Director Mr. Padil Begolli and the Head of the Lab, Mr. Bardh Begolli, who gave us a very good tour and account of it's capacity. Dan said it was probably the best lab available.

05-20-05: The Seminar on Dairy Herd Productive Health and Management Guide was presented in Istoq to the 12 Veterinarians and AI Techs along with two Dairymen. This presentation was directed to the Professionals who are serving the Dairymen with the intend of providing these Vets and AI Techs with continuing education to better serve their clients in overall management at the same time they serve them with Health and Breeding needs. There was a good response and good discusses.

05-21-05: Reviewed and edited Cost and Net Income Spread Sheet and other documents prepared during the assignment. Added Economic Impact Calculations to Management Guide

05-21-05: Review Interim Report and added discussion of Economic Impact. Completed Chemonics Time Sheet. Peter suggested some changes in title portion and clarification in presentation of the Cost and Profit Spread Sheet.

05-23-05: Reviewed Peter's suggestions and made revisions in the Spread Sheet. I my with Peter, Arben and Zijadin to review the Presentation and make revisions. Following the meeting I re-worked the Presentation and sent to Peter and Specialist for approval and translation.

05-24-05: Reviewed and revised Final Report and Docs.

Presented the Final KAMP Seminar to 43 participants including KAMP Members. Participant signup list was past around and is available from one of the Specialists.

Dairy Cow Reproductive Health and Management

ATTACHMENTS

- Predicted Dairy Production Costs and Returns to Management and Capital Investment
- Dairy Herd Reproductive Health and Management Guide
- Dairy Herd Model Variables and Assumptions for Production Predictions
- Total Dairy Herd Management Guide - Powerpoint Presentation
- Dairy Herd Reproductive Health and Management Guide - Powerpoint Presentation
- Barn Sheet


SHPQK
KAMP

****PREDICTED DAIRY PRODUCTION COSTS & RETURN TO MANAGEMENT AND CAPITAL INVESTMENT**

KAMP Commercial Size Producers 10 to 100+ Cows

21 May 2005 Purchased Replacement Mgt Option

INPUT VARIABLES TO BE ADJUSTED FOR SPECIFIC HERD PRODUCTION FACTORS *See footnote			
(Only blue number variables can be changed)			
100	#Adult Cows in Herd	0.80	Calving Rate
0.68	Lactation factor (% lactation)	1.00	Calf Cull Rate at <1yr
25.00	Herd Milk Yield Level Kg/cow/day	0.00	Heifer Cull Rate at 3 yr
0.30	Milk Price Euro/Lt	0.95	Calf Survival/ year to 2 years
2.00	Cull Young Cattle Price <3yrs Euro/kg	0.98	Cow Survival =>2 years
1.00	Cull Cow Price >3yrs Euro/kg	0.23	Cow Culling Rate after 2% mortality
32	# DryCows	0.25	Purchased Heifer Herd Replacement Rate
76	# Calves < 1 yr	150	Average Calf Weight at Sale
0.75	Conv'nFactor-FeedCost toTotalVarCost	500	Average 3 year Heifer Sale Weight
0.85	Portion of year in Lactation	450	Average Cull Cow Weight
1.36	Daily Feed Cost Replacements >1 yr Estimate	0.68	Daily Feed Cost Calves< 1yr Estimate
0.50	Sex Ratio	0.00	Calf Saved Rate at 1yr
1500.00	Replacement Heifer Purchase Cost	365	Days of Herd Activity in the year
0.105	Daily Feed Cost(0.105*Milk Yield)(estimated approximate from Chapin Rations April 2005)		

PREDICTION PROGRAM FOR ANNUAL PRODUCTION		
EURO		
65,153		Feed Cost for all Lactating Cows per year
15,885		Feed Cost for Dry Cows, Pregnant and Growing Heifer
9,432		Feed Cost for Calves under one year
90,469	Total Feed Cost for all the Dairy Herd	
30,156	Non-Feed Variable Costs Estimate	
120,625	TOTAL VARIABLE COST ESTIMATE	

37,500	PURCHASED HEIFER HERD REPLACEMENT COST

186,150	Total Milk Gross Income	
22,800		Cull Animal <6 month Gross Income
0		Cull Heifers >3 yr Gross Income
10,350		Cull Cow Gross Income
33,150	Total Cull Animal Gross Income	
219,300	TOTAL GROSS INCOME INCLUDING MILK AND ANIMALS	
61,175	**NET INCOME RETURN TO LABOR, MANAGEMENT AND CAPITAL**	

***Footnote: Probable Range of Variables (Change only with confirmed on farm data.)**

10 to >200	#Adult Cows in Herd	.5 to .9	Calving Rate
50 to 90	Lactation factor (% lactation)	1.0 to 0.0	Heifer Calf Cull Rate at 1yr
10 to 50	Herd Milk Yield Level Kg/cow/day	.25 to .35	Heifer Cull Rate at 3 yr
.20 to .33	Milk Price Euro/Lt	.85 to 1.0	Calf Survival/ year to 2 years
1 to 2	Cull Young Cattle Price <3yrs Euro/kg	.95 to 1.0	Cow Survival =>2 years
.75 to 1.5	Cull Cow Price >3yrs Euro/kg	.15 to .30	Cow Culling Rate after 2% mortality
.2 to 1.5	# DryCows&Replm'ts Estimate Factor	.15 to .30	Cow Herd Replacement Rate
.5 to .8	# Calves < 1 yr Estimate Factor	150 to 250	Average Calf Weight at Sale
.5 to .84	Conv'nFactor-FeedCost toTotalVarCost	400 to 600	Average 3 year Heifer Sale Weight
.2 to 1.5	Multi-Factor Estimate DryGrowing An.	400 to 500	Average Cull Cow Weight
1.21 to 1.36	Daily Feed Cost/ Replacements >1 yr Estimate	0.61 to .68	Daily Feed Cost/ Calves< 1yr Estimate
0.4 to 0.6	Female Fraction of Total Calves	0.0 to 1.0	Heifer Calf Saved Rate at 1 yr
1000 to 1500	Replacement Heifer Purchase Cost Eur		
.097 to .109	Daily Feed Cost (0.105*Milk Yield) (Estimated from Chapin Rations April 2005)		

By Jim Dickey, Animal Reproductive Health and Management Specialist

PREDICTED DAIRY PRODUCTION COSTS & RETURN TO MANAGEMENT AND CAPITAL INVESTMENT

KAMP Commercial Size Producers 10 to 100+ Cows

21 May 2005 Total Herd Mgt Option - Fixed Calving Rate of 0.80

INPUT VARIABLES TO BE ADJUSTED FOR SPECIFIC HERD PRODUCTION FACTORS *See footnote			
(Only blue number variables can be changed; Don't change red - will disable program)			
100	#Adult Cows in Herd	0.80	Calving Rate
0.68	Lactation factor (% lactation)	0.20	Heifer Calf Cull Rate at 1yr
30.00	Herd Milk Yield Level Kg/cow/day	0.20	Heifer Cull Rate at 3 yr
0.30	Milk Price Euro/Lt	0.95	Calf Survival/ year to 2 years
1.50	Cull Young Cattle Price <3yrs Euro/kg	0.98	Cow Survival =>2 years
1.00	Cull Cow Price >3yrs Euro/kg	0.23	Cow Culling Rate after 2% mortality
94	# DryCows&Replm'ts	0.25	Cow Herd Replacement Rate
76	# Calves < 1 yr	200	Average Calf Weight at Sale
0.75	Conv'nFactor-FeedCost toTotalVarCost	500	Average 3 year Heifer Sale Weight
0.85	Portion of year in Lactation	450	Average Cull Cow Weight
1.36	Daily Feed Cost Replacements >1 yr Estimate	0.68	Daily Feed Cost Calves< 1yr Estimate
0.50	Female Fraction of Total Calves	0.80	Heifer Calf Saved Rate at 1yr
0.105	Daily Feed Cost(0.105*Milk Yield)	365	Days of Herd Activity in the year

PREDICTION PROGRAM FOR ANNUAL PRODUCTION		
EURO		
78,183		Feed Cost for all Lactating Cows per year
46,542		Feed Cost for Dry Cows, Pregnant and Growing Heifer
14,147		Feed Cost for Calves under one year
138,873	Total Feed Cost for all the Dairy Herd	
46,291	Non-Feed Variable Costs Estimate	
185,164	TOTAL VARIABLE COST ESTIMATE	
223,380	Total Milk Gross Income	
13,680		Cull Animal <3 yr Gross Income
4,245		Cull Animal >3 yr Gross Income
10,350		Cull Cow Gross Income
28,275	Total Cull Animal Gross Income	
251,655	TOTAL GROSS INCOME INCLUDING MILK AND ANIMALS	
66,492	**NET INCOME RETURN TO LABOR, MANAGEMENT AND CAPITAL**	

***Footnote: Probable Range of Variables (Change only with confirmed on farm data.)**

10 to >200	#Adult Cows in Herd	.5 to .9	Calving Rate
50 to 90	Lactation factor (% lactation)	1.0 to 0.0	Heifer Calf Cull Rate at 1yr
10 to 50	Herd Milk Yield Level Kg/cow/day	.25 to .35	Heifer Cull Rate at 3 yr
.20 to .33	Milk Price Euro/Lt	.85 to 1.0	Calf Survival/ year to 2 years
1 to 2	Cull Young Cattle Price <3yrs Euro/kg	.95 to 1.0	Cow Survival =>2 years
.75 to 1.5	Cull Cow Price >3yrs Euro/kg	.15 to .30	Cow Culling Rate after 2% mortality
.2 to 1.5	Daily Feed CostDryCows&Replacem'ts	.15 to .30	Cow Herd Replacement Rate
.5 to .8	Daily Feed Cost Calves < 1 yr	150 to 250	Average Calf Weight at Sale
.5 to .84	Conv'nFactor-FeedCost toTotalVarCost	400 to 600	Average 3 year Heifer Sale Weight
.2 to 1.5	Multi-Factor Estimate DryGrowing An.	400 to 500	Average Cull Cow Weight
1.21 to 1.36	Daily Feed Cost/ Replacements >1 yr Estimate	0.61 to .68	Daily Feed Cost/ Calves< 1yr Estimate
0.4 to 0.6	Female Fraction of Total Calves	0.0 to 1.0	Heifer Calf Saved Rate at 1 yr

.097 to .109	Daily Feed Cost (0.105*Milk Yield) (Estimated from Chapin Rations April 2005)

By Jim Dickey, Animal Reproductive Health and Management Specialist

PREDICTED DAIRY PRODUCTION COSTS & RETURN TO MANAGEMENT AND CAPITAL INVESTMENT

KAMP Commercial Size Producers 10 to 100+ Cows

21 May 2005 Total Herd Mgt Option

INPUT VARIABLES TO BE ADJUSTED FOR SPECIFIC HERD PRODUCTION FACTORS *See footnote			
(Only blue number variables can be changed; Don't change red - will disable program)			
100	#Adult Cows in Herd	0.95	Calving Rate
0.81	Lactation factor (% lactation)	0.20	Heifer Calf Cull Rate at 1yr
25.00	Herd Milk Yield Level Kg/cow/day	0.20	Heifer Cull Rate at 3 yr
0.30	Milk Price Euro/Lt	0.95	Calf Survival/ year to 2 years
1.50	Cull Young Cattle Price <3yrs Euro/kg	0.98	Cow Survival =>2 years
1.00	Cull Cow Price >3yrs Euro/kg	0.23	Cow Culling Rate after 2% mortality
93	# DryCows&Replm'ts	0.25	Cow Herd Replacement Rate
90	# Calves < 1 yr	200	Average Calf Weight at Sale
0.75	Conv'nFactor-FeedCost toTotalVarCost	500	Average 3 year Heifer Sale Weight
0.85	Portion of year in Lactation	450	Average Cull Cow Weight
1.36	Daily Feed Cost Replacements >1 yr Estimate	0.68	Daily Feed Cost Calves< 1yr Estimate
0.50	Female Fraction of Total Calves	0.80	Heifer Calf Saved Rate at 1yr
0.105	Daily Feed Cost(0.105*Milk Yield)	365	Days of Herd Activity in the year

PREDICTION PROGRAM FOR ANNUAL PRODUCTION		
EURO		
77,369		Feed Cost for all Lactating Cows per year
45,962		Feed Cost for Dry Cows, Pregnant and Growing Heifer
16,800		Feed Cost for Calves under one year
140,130	Total Feed Cost for all the Dairy Herd	
46,710	Non-Feed Variable Costs Estimate	
186,840	TOTAL VARIABLE COST ESTIMATE	

221,053	Total Milk Gross Income	
16,245		Cull Animal <3 yr Gross Income
5,041		Cull Heifers >3 yr Gross Income
10,350		Cull Cow Gross Income
31,636	Total Cull Animal Gross Income	

252,689	TOTAL GROSS INCOME INCLUDING MILK AND ANIMALS

65,849	NET INCOME RETURN TO LABOR, MANAGEMENT AND CAPITAL

***Footnote: Probable Range of Variables (Change only with confirmed on farm data.)**

10 to >200	#Adult Cows in Herd	**.5 to .9**	Calving Rate
50 to 90	Lactation factor (% lactation)	**1.0 to 0.0**	Heifer Calf Cull Rate at 1yr
10 to 50	Herd Milk Yield Level Kg/cow/day	**.25 to .35**	Heifer Cull Rate at 3 yr
.20 to .33	Milk Price Euro/Lt	**.85 to 1.0**	Calf Survival/ year to 2 years
1 to 2	Cull Young Cattle Price <3yrs Euro/kg	**.95 to 1.0**	Cow Survival =>2 years
.75 to 1.5	Cull Cow Price >3yrs Euro/kg	**.15 to .30**	Cow Culling Rate after 2% mortality
.2 to 1.5	Daily Feed CostDryCows&Replacem'ts	**.15 to .30**	Cow Herd Replacement Rate
.5 to .8	Daily Feed Cost Calves < 1 yr	**150 to 250**	Average Calf Weight at Sale
.5 to .84	Conv'nFactor-FeedCost toTotalVarCost	**400 to 600**	Average 3 year Heifer Sale Weight
.2 to 1.5	Multi-Factor Estimate DryGrowing An.	**400 to 500**	Average Cull Cow Weight
1.21 to 1.36	Daily Feed Cost/ Replacements >1 yr Estimate	**0.61 to .68**	Daily Feed Cost/ Calves< 1yr Estimate
0.4 to 0.6	Female Fraction of Total Calves	**0.0 to 1.0**	Heifer Calf Saved Rate at 1 yr
.097 to .109	Daily Feed Cost (0.105*Milk Yield) (Estimated from Chapin Rations April 2005)		

By Jim Dickey, Animal Reproductive Health and Management Specialist

DAIRY HERD REPRODUCTIVE HEALTH AND MANAGEMENT GUIDE

By Jim Dickey, Dairy Cow Reproductive Health and Management Specialist
Kosovo Cluster & Business Support, USAID
May 2005

COMPARISION OF TWO MAJOR MANAGEMENT SYSTEMS

IMPORTED BREED HEIFER REPLACEMENTS
All replacements are purchased imported bred heifers

TOTAL MANAGEMENT HERD BREED REPLACEMENTS
All replacements are bred and grown on the dairy farm

IMPORTED BRED HEIFER REPLACEMENTS

a) Currently Most Common in Kosovo Commercial Herds (estimate 70 to 80%)

b) Demands Less Herd Management
Managing Mainly Mature Milking Cows
   (1) Lower Mortality & Health Problems
   (2) Easier Nutrition Management for Milk Yield
   (3) Impregnating Cows Less Expensive
      (a) Inexpensive A. I. Semen or Bulls can be used
      (b) No Expense for Genetic Improvement Selection

c) All Calves can be sold before 1 year
   i) Calves can be sold as Veal Calves (milk fed <3 months)
   ii) High Price for Veal Calves
   iii) No Yearling Calves and 2 year-old Heifers to Manage/Feed

d) Advantages
   i) Lower Feed Cost
   ii) Lower Breeding Cost
   iii) Lower Veterinarian Cost
   iv) Lower Mortality Cost
   v) Imported Bred Herd Replacement Heifers Available on Demand
   vi) Imported Price Currently Lower than Local Production Costs
   vii) Flexible Replacement Heifer Numbers as Needed Annually
   viii) No Genetic Selection Except at Purchase

e) Net Income Favors Imported Replacement Management System
Predicted Annual Net Income 15 cows at 80% Reproduction
   (1) Imported Heifers – Euro 8,663 to 23,555 (with 25 to 50 lts. Milk Production)
   (2) Total Herd Mgt – Euro 6,390 to 21,256 (with 25 to 50 lts. Milk Production)
   (3) 10% Reproduction Increases Annual Net Income Range – Euro 190 to 310/Cow

f) Required Management
   i) Lactating Cows –
      (1) Challenge feed according to Milk Production
      (2) See KAMP Dairy Rations
   ii) Dry Pregnant Cows
      (1) Reduce concentrate to Maintenance Level last 2 weeks of lactation.
      (2) Last month of gestation increase concentrate to 2 to 4 kg in support of final stage of pregnancy
   iii) Milk Fed Veal Calves
      (1) Feed half Milk/Replacer AM & PM – Fed from elevated Nipple Bottle or Bucket
      (2) 1 to 4 days - Colostrum – 2 to 3 lts
      (3) 4 – 10 days – 1.5 kg Milk & 1.5 kg Replacer
      (4) 10 days to 3 wks – 3 to 4 lts Replacer and Free Choice Starter Concentrate (Young Calf) and Fresh Water
      (5) 3 to 6 wks – 4 to 5 lts Replacement and Free Choice Starter and Fresh Water
      (6) 6 to 8 wks – 4 lts Replacement and Free Choice Starter and Fresh Water
      (7) 8 to 10 wks – 2 lts Replacement and Free Choice Starter and Fresh Water
      (8) > 10 wks – Concentrate, Best Forage and Fresh Water – if selling as veal continue =>2 lts Replacement until sale
      (9) Free Choice Fresh Water is Essential

g) Contact Veterinarian for all State Recommended Testing, Vaccinations, such as Brucelosis, Anthrax and Black Leg (Clostridium) when applicable

h) Reproductive Health –
   i) Feed for Milk Yield and Reproductive – Should be gaining weight if producing less than 50 lts/day
   ii) Breed Cow by AI Service if possible beginning with second Estrus at 42 days after calving
   iii) If no Estrus observed or Estrus repeats after 3 AI's, ask your Vet to review the Nutrition level and treat for Reproductive Infection
   iv) Ask Vet to confirm Pregnancy by Palpation after 2 to 3 months from calving (some cows show False Estrus when pregnant)

i) Mastitis and Hygiene Recommendations
   i) Wash and disinfect hands, udder, teats dip and equipment before and between milking each cow
   ii) Proper machine function and milking procedure
   iii) Test all lactating cows and all quarters monthly with California Mastitis Test (CMT)
   iv) Dry cow treatment – all cows, all quarters – under the direction of your veterinarian
   v) Culling of problem cows. Cull cows with the repeated clinical or positive CMT test 2 or more times in two or more quarters

j) Drying Off Period – Proper dry-out 60 day before predicted calving date reduces Mastitis threat and gives the cow a rest period on good forage
   i) Reduce concentrate to Maintenance Level last 2
      (a) weeks of lactation (Good Forage Free Choice)
   ii) Last month of gestation increase concentrate to
      (a) 2 to 4 kg in support of final stage of pregnancy

k) Digestive Problems
   i) Avoid abrupt changes in Ration – especially young animals

l) Respiratory Infections
   i) Observe all cattle but mainly calves for breathing problems
   ii) Isolate animals with temperature as your Veterinarian advises

m) Foot Care
   (1) Hoof Trimming
   (2) Disinfectant for foot rot

n) Disadvantages of Imported Bred Heifer Replacement Program
   (1) Dependent on Uncertain Import Price
   (2) Dependent on Bred Heifer Availability
   (3) Genetic Adaptation to Kosovo Environment

TOTAL MANAGEMENT HERD BRED REPLACEMENTS

a) Few Commercial Dairies practice Total Herd Management in Kosovo
   (1) Older established dairies
   (2) Some of the new dairies

b) More Expertise is Required
   (1) Manage Mature Milking Cows as Presented for Imported
   (2) Also Manage Calves, Growing Stock & Select Replacements

c) More Expense of Feeding, Mortality & Genetic Improvement

d) Additional Management Components Required
   (1) Feed and Manage of Calves <1 year
      (i) Same Calf Management to 6 months
      (ii) Feed Calf Growing Ration and Forage to Calves >6 months
      (iii) Veterinary Service/owner herd health care for added Calves
   (2) Feed and manage heifer replacements 12 months until 3 yrs
   (3) Veterinary Service/owner herd health care
      (i) Selection of replacement heifers
      (ii) Breeding of replacement heifers

e) Genetic Management of Total Herd
   (1) Purchase highest genetic potential Semen Available
   (2) Purchase Quality Tested Semen for best conception
   (3) Keep Individual Milk Yield Records for cow culling & Heifer Selection

f) Advantages of Total Herd Bred Replacement Management
   (4) Environmental Adaptation
   (5) Genetic Improvement of Herd
   (6) Consistent Replacement Source
   (7) Limit Exotic Disease Introduction

ECONOMIC COMPARISON OF TWO MANAGEMENT SYSTEMS

Predicted Annual Net Income for
15 cows
80% Reproduction Rate
Milk Yield 25 liters (see spreadsheets)

Imported Bred Heifers Replacements	Net income	8,663 €
Total Herd Management	Net income	6,390 €
Total income of Imported over Total Mgt		**2,280 €**

DAIRY HERD MODEL VARIABLES
AND
ASSUMPTIONS FOR PRODUCTION PREDICTIONS

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May 2005

Prediction Model Variables and Assumptions:

Variable Factors:

- Total Number of Adult Cows (=>3 years)
- Individual Cow Milk Production Level
- Milk Grade/Price
- Feed Component Prices
- Percent of Cow Herd in Lactation

Assumptions:

- Cow => 2 yrs Mortality = 2%/year
- Calf Mortality = 5%/year
- Cow Replacement Rate = 20%/year (Assuming 5 lactations)
- Calving Rate = 80%
- Lactation Period = 305 days or 85% of year
- Male Calves sold before 1 year = 100%
- Average Male Calves weight = 200kg
- Surviving Heifer Calves saved for replacement at 1 year of age = 80%
- Surviving Heifer Calves sold at 1 year of age = 20%
- Average Weight of Surviving Heifer Calves sold at 1 year of age = 200 kg
- Surviving 3 year old Heifers saved for replacements = 70%
- Surviving 3 year old Heifers sold for stockers or slaughter = 30%
- Average sale weight of 3 year old Heifers = 500 kg
- Sale Price for all animals sold at 3 years or younger = EU$1.50/kg
- Cull Cows after 2 % death low = 18% of Adult Cow Herd at beginning of year
- Average Cull Cow weight = 450 kg
- Sale Price for Cull Cows = EU$1.00
- Daily feed cost for Dry Cows, Pregnant & Growing Heifers = 50% of 25 lt level Lactating Cow Cost
- Daily feed cost for all Calves under 1 year = 25% of 25 lt level of Lactating Cow Cost
- Total Feed Costs = 50% to 84% of Total Variable Costs