

Kosovo Association of Milk Producers
Improving Nutritional Assistance
Dairy Nutrition Specialist
Kosovo Cluster and Business Support Project

Trip Report: Dr. Roy Chapin, March 5 – April 29, 2005

Purpose of the Assignment

To develop the most cost effective dairy rations that are most beneficial for the Kosovo breed of cows and Kosovo dairy management systems. The best cost rations were developed to be marketed by the Kosovo Dairy Producers Association through local feed millers.

Introduction

The purpose of this narrative is to estimate **economic impact**, which is on-going, on specific dairies in Kosovo on which the Kosovo Association of Dairy Producers (KAMP) has provided nutritional assistance since the second week in March. When measuring economic impact, the most obvious and immediate as far as cash flow is concerned, is **milk flow**. In addition, there is the value of **improved milk components**, particularly **milk fat percentage and milk protein**. Improved nutrition can also improve **milk quality**.

A very real economic improvement that is happening in Kosovo is an **improvement in body condition** of cows fed improved rations. This is hard to measure but is being reported almost universally by milkers and owners. My U.S. National Research Council 2001 dairy computer program is predicting an average increase in body weight of over 500 grams a day on the rations suggested for cows giving 25 liters. This is worth over 50 cents per cow per day. This is like money in the bank as it helps sustain production throughout the lactation curve, helps improve production during the subsequent lactation and of course means the animal is worth more when she is culled for slaughter.

Another benefit of feeding improved rations is **improved animal health** as measured by such things as improved breeding performance and the catch-all category of lower vet bills. I haven't put a value on that but it is there and it is real with economic impact becoming apparent during the next twelve months and beyond after improved nutrition is implemented. In the United States I have routinely had dairymen report reduced vet bills during the twelve months following an improved dairy nutrition program, which includes improved energy, protein, vitamins, trace minerals and major minerals.

The milk price presently paid in Kosovo is very conducive to feeding for increased milk flow. Our field results show an almost immediate improvement in milk income over feed cost when the ration is improved. **The best ration is the one that makes the dairyman the most money and not the one that is the cheapest.** Most milk producers in Kosovo know this and act accordingly. Still, KAMP must be vigilant in their selling of the value

of improved nutrition and help the milk producer calculate marginal revenue and marginal costs so that he/she will make good decisions based on potential economic gain.

A survey is being conducted by KAMP representatives to evaluate the economic benefit of the improved nutrition. Specifically of improved forage harvesting and preservation, improved hygiene and milk quality technologies, improved animal genetics, improved herd management including record keeping, etc.

By working with specific dairies KAMP has demonstrated that improved feeding programs will elicit more milk along with a profound economic impact within a week of implementation of the new ration. I compliment Kosovo dairymen on their willingness to try new approaches to feeding their cows and in their rapid acceptance of new technologies when they see that it is economically beneficial to them.

Following are some specific examples from working with individual dairies in Kosovo since 9 March 2005. This economic impact evaluation will be on-going. I can report what has happened up until the latter part of April. I hope KCBS will be able to update this once a month or at least once a quarter as the improvement should become greater with time. It should be pointed out that it is difficult to increase milk production of late lactation cows. Your hope is that you can sustain their production without as much decrease in production as expected. When this late lactation cow has her dry period and enters the herd as a fresh cow, you can expect her to peak higher and sustain longer if our recommendations are followed. This means that herd average should continue to improve during the next 365 days as all cows go dry and then freshen. To ensure this result it will be necessary to monitor and advise these herds throughout the change of seasons, change in forage and feedstuff price and availability and to continue encouraging implementation of improved feeding technologies. Holding the hands of milk producers in Kosovo by KAMP staff and consultants will help increase the economic impact and increase the economic return on previous and present technology transfers.

Economic Results

The economic increase in gross profit on the selected farms that we have documented to date are:

Euroлона Dairy	2,630	Euros per month
Luma Commerce	1,300	Euros per month
Rudina	3,000	Euros per month
Dukagjini Data Dairy.	320	Euros per month
Premium Vet Dairy	1,890	Euros per month
Mazreku Dairy	6,900	Euros per month
Disa Dairy.	384	Euros per month
Agim Ramadani,	168	Euros per month
Ismail Demiri Dairy	264	Euros per month
Mujoto Dairy	660	Euros per month

Jetishi Dairy	800	Euros per month
Isufi Dairy	360	Euros per month
Qerim Qerreti Dairy	840	Euros per month
Total	19,516	Euros per month

Results from Individual Farms

A. Eurolona Dairy near the Pristina airport. Manager and owner is Milizim Berisha. On 9 March 2005, 45 cows were producing 750 liters of milk = 16.67 liters average/cow/day. Cows were not fed free choice hay as Milizim and his veterinarian (present) were told that it would unbalance the ration. Arben and I convinced him otherwise and he started feeding more hay on that day. A few days later he reported that butterfat had gone from 3.25 to 3.9% (verified by seeing his record book). This is significant economically as he is paid 25 cents/liter for milk containing 3.5% or less butterfat and 30 cents/liter if the butterfat is 3.6% or higher. This is a return of 85 cents/cow/day on an investment of about 15 cents worth of hay. **This amounts to about 1000 Euros per month on his dairy from increased butterfat alone.**

Cows are in stanchions, making it easy to feed each cow individually. We urged lining up of the cows in decreasing order of production level and feeding accordingly to help cows peak as high as possible and thus feed to raise the herd average.

His herd is made up of 31 Holsteins some Simmentals and a few Brown Swiss. The Holsteins are very thin with a body condition score of 1 to 1.5. I proposed a new ration. Since it was more expensive, he said he'd put seven Holsteins on it to test for results. After about a week he put the entire herd on the new ration near the end of March. He home mixes his own dairy mash and feeds about 10 kg of dairy mash plus 10 kg corn silage plus free choice hay (now). He will be adding wet malt. I have given him new rations. On 18 April he reported that 42 cows were producing 870 liters = 20.7 liters average. Therefore, after less than one month on new rations his cows are up four liters of milk/cow/day in addition to the increase in milk butterfat percentage. It is hard to determine exact feed costs on a dairy but using local prices for milk and feed costs and predicting milk production using the U.S. National Research Council's 2001 Dairy software, there is a strong 20 cents per liter income above feed costs per liter of extra milk. Since he is up four liters of milk, he is earning about 80 cents more per cows/day from **increased milk** production. **This will return him another 1000 Euros per month.**

In addition, it is estimated that his cows are gaining about 500 grams a day. At one euro/kg to put on weight, this **weight gain** is worth 50 cents/cow/day x 42 cows x 30 days = **630 Euros per month.**

In summary, 42 cows at Eurolona Dairy have increased the value of butterfat 1000 Euros plus 1000 from increased milk flow and an estimated 630 Euros from body weight gain = 2630 Euros more income per month since the nutritional intervention of KAMP starting about the middle of March 2005.

B. Luma Commerce. Sadri and Safet Luma are owners and managers. Working in the present economic environment that is favorable for milk production due to a strong demand for milk and favorable prices, is a welcome change. Luma Commerce used to have 140 Simmentals but is down to 70 now with the intention to replace all Simmentals with Holsteins within the year. He is milking a little over 40 cows now. Cows are group housed in six different pens inside a very nice barn so that cows can be divided by production level and fed accordingly. I think this has been done only partially. We have supplied rations to be fed to support various levels of production. Sadri indicated that he plans to implement major management changes over the next several months, including grouping according to production.

It is difficult to get absolute production levels per cow but Sadri said that present production is 23 liters, which is very good for Simmentals and this is up 2.5 to 3 liters/cow/day. This would mean that there is 50 - 60 cents gain in the value of milk/cow/day and probably about the same value from the increase of body weigh for a total of about **one Euro/cow day x 43 cows x 30 days equals about 1300 Euros per month for this dairy.**

Sadri expressed his appreciation for KAMP's help and said they were implementing new management techniques. He and I set a production goal of 25 liters/cow/day for his Simmentals and higher if he repopulates with Holsteins, which is his intention.

C. Rudina Dairy. This is one of the largest dairies in Kosovo with about 100 milking cows. Rudina processes their own milk and sells 80% as fresh milk and 20% as yogurt. They are very supportive of KAMP's involvement and reports good results from KAMP intervention including improved animal breeding performance (early indications), weight gain and improved milk flow. Mr. Orus Krasniqi, the owner, announced he plans to depopulate the Brown Swiss (65) and Simmentals (4) and replace them with Holsteins. Both he and Sadri Luma have said they like milk and money and feel Holsteins will supply more of both than other breeds. His two on-sight veterinarians don't favor the replacement of the Brown Swiss with Holsteins because of breeding problems with the Holsteins.

Holsteins are a more fragile cow and need to be fed better than Brown Swiss and Simmentals in order to reach their potential. In the meantime KAMP is working to improve milk production with the existing animals. Mr. Krasniqi spent some time in the U.S. and observed the amount of protein that is fed to high producing cows. He came home and did the same without taking care of the other nutrients, particularly minerals, and was not pleased with the results which included more health problems and eventually falling milk production. I'm not clear on the etiology of these problems. He has been relying on 200 grams of Sano's Camisan to supply enough calcium and salt. This results in serious deficiencies of both calcium and salt, particularly when milk production exceeds 15 to 20 liters. I don't know if this is causative of his problems but should be corrected by adding limestone and salt to the ration. I don't think his problems are

related to high protein intake, except that increased protein intake encourages more milk production and without balancing the rest of the ration, problems could result including morbidly thin cows, demineralization of the skeleton, reduced immune system health with susceptibility to opportunistic pathogens, poor breeding performance and eventually reduced milk production.

I have spent most of the time doing ration formulation for his beef raising project. He is to receive beef calves shortly and we're trying to maximize his inputs and outputs. This is a new service for KAMP and will need to be evaluated after it is implemented and results are known.

I have prepared rations for him to evaluate present and proposed rations using present feedstuffs plus the economic impact of feeding legume forage versus grass forage. He has received a hard copy of these data recorded in a complete Milk Money Maker computer program with six rations that will support 25, 30, 35, 40, 45 and 50 liters of milk using grass forage and another six rations using legume forage.

From what Mr. Krasniqi has reported plus reports from milkers and veterinarians, it appears that milk production is up about two liters with improved body condition amounting to about 500 grams of weight gain per day. I'm estimating that the economic impact at Rudina is about one Euro per cow/day. With 100 milking cows this would amount to **3000 Euros per month from the milking herd.**

D. Dukagjini Data Dairy. Dukagjini was using one of these rations on his herd of 20 lactating Simmental cows. Milk average/cow/day is 450 liters/20 cows = 22.5 liters. He sells retail for 40 cents per liter with some marketing costs. Cows are in good body condition. I estimated 3.5 BCS. I formulated a new ration and presented it to him with the suggestion that he feed extra protein and energy to his top producers. He has done that and 21 cows are now producing 510 liters/day = 24.28 liters/cow/day and thus his cows are up two liters in milk. Twenty four liters of milk from Simmentals is very good. The point to make here is that even at 22.5 liters of milk, the herd average can be increased by feeding the top producers better. **I'm estimating the economic impact here at 60 cents/cow/day x 21 cows x 305 days = 3,843/12 = 320 euros per month**

E. Premium Vet Dairy. This dairy near Istog is owned and run by Qerim Halilaj and Dr. Fadil Sadikaj (DVM). They are milking 38 Holsteins and a few Brown Swiss and Simmentals for a total of 44 lactating cows from which they were getting 830 liters of milk = 18.86 liters/cow/day. Milk is sold at 32 cents/liter. Cows are in tie stalls. From mid-May until November they have green grass that they will pasture or bring to the cows. Wet malt is fed throughout the year. The present ration contains corn silage, wet malt, wet beet pulp and a little hay. The dry matter content of the total ration was less than 40%. Dry matter intake was below predicted amounts. Ration dry matter should be 45% or higher. New rations were formulated including drying out the ration some by cutting back on wet feed and feeding more dry hay. Dry matter intake improved. With the new ration cows went up about three liters of milk within a week.

At our suggestion they lined up the cows by production level to ease feeding by production. A string of top producing Holsteins is averaging over 30 liters of milk/cow/day. Three weeks after KAMP intervention 42 cows were giving 1005 liters = 23.9 liters/cow/day, which is a five liter increase. This is worth at least one Euro/cow/day plus about 50 cents of weight gain/cow/day for **an estimated value of 1.5 Euros x 42 x 30 = 1890 Euros per month** of increased value since KAMP intervention. On 28 April they reported that they had five Holstein cows give 55 or more liters of milk with top cows up ten liters/head/day. They expected to increase the size of the herd by about 200 cows so the extended benefit here will be substantial. They are also looking at importing and supplying dairy premixes.

F. Teuta Mi Dairy near Peja and Istog. Manager is Shefquet Dreshaij. I visited this dairy in November of 2003 with Zijadin and Gani of KBS. By adjusting the ration then there was a marked improvement in milk production. We have no data to report from this trip as they are drying up all their cows and expecting to receive 160 Simmentals and 66 Holstein bred heifers. I have formulated a heifer ration for them. On 22 April 2005 we held a seminar there with a little over 20 participants followed by a lamb barbeque. Mr. Dreshaij said that the importation of bred heifers was delayed waiting for a letter of credit. I told him that I would like to work with him when he has a herd of milking cows.

G. Mazreku Dairy at Malashiva. This is a new dairy by the Mazreku family, Sedri – Father - and sons Osmon and Azrem. By their own admission, they are not cattle people. They invested over 500,000 Euros from their petroleum business. They have about 120 cows, 20 Brown Swiss and 100 Simmental. 110 were lactating when we first saw them on 17 March. They were marketing 1050 liters per day = 9.5 liters/cow. The calves were consuming about 100 liters so with that added in, production was about 10.5 liters/cow/day. Included in their feeding program were two kg of straw so we had them remove that immediately. They fed it because someone said they should. We gave them a new ration on 23 March, which they started within a few days. Concentrate is made by a local mill. Production started going up in about three or four days. Within three weeks it was 16.1 liters/cow/day. It has now hit over 20 liters a day. At present levels of production the value of increased milk production is about 1.80 Euros/cow/day plus an estimated 50 cents weight gain for a total of **2.30 x 100 cows x 30 days = 6,900 Euros per month increase in net income.**

The owners have been sorry that they invested 500,000 Euros in this dairy. They even have the foundation laid for doubling their size. KAMP can know they have made an impact if they see the expansion continue, as it was stopped due to poor production. The milk processor said that if milk production did not increase from the 10.5 liter level that the dairy would go bankrupt. I think the owners are pretty optimistic now. Osmon called Zijadin and said their biggest problem was that they needed a bigger milk tank. They are having some high acidity problems now. This is probably due to poor hygiene and could include not cooling the milk fast enough. (Confirmed to be a milk cooling tank problem.) I look for improved milk production here. I will be supplying new rations including malt. Previously there was a report written on the success of KAMP intervention at Mazreku Dairy.

H. Disa Dairy. This dairy is near Istog and owned by Bekin Osmani. There are 16 milking cows made up of one Holstein, one Simmental and the rest Montbeliarde, a French breed of cows. These 16 cows were giving 420 liters of milk = 26.0 liters/cow/day. The Holstein cow had been fresh about a month, was giving around 50 liters of milk and was melting away with a body condition score of about one. She was fed only two kg more feed. I urged that the cows be fed more forage, as the bunks were empty, and the cows be fed according to production, which they agreed to do. Three weeks later they were reporting a milk flow of 440 liters from 16 cows = 27.5/cow/day and thus an increase in herd average of 1.5 liters. This along with an anticipated improvement in body condition means that there was a improved earnings of about 80 cents/cow/day x 16 x 30 = **384 Euros per month**. The impressive development here is that even though this was the highest producing herd we encountered, there was still more milk to be produced by feeding better.

I. Agim Ramadani, Gjilan. 23 March 2005. This is a small dairy with seven milking cows (3 Holstein, 3 Simmental and 1 Brown Swiss. These seven cows give 110 liters of milk = 15.7 liters/cow/day. Milk is sold at a local cheese factor for 27 cents. We met Agim earlier this week and he said production was up about two liters per cow. This will increase income on this farm about 30 cents plus about 50 cents weight gain = 80 cents x 7 x 30 = **168 Euro's/month increased net revenue**.

J. Pal Raja Dairy near Gjakova. 24 March 2005. This is a small dairy with six cows in lactation producing 98 liters = 16.3 liters/cow/day. We did the ration work and delivered it to him. To date (28 April), despite promises to implement the changes immediately, nothing has been done here. This is a disappointment to us as we used valuable assets and as yet see no benefit.

K. Ismail Demiri Dairy. 25 March 2005. This dairy has 8 cows producing 160 liters of milk = 20 liters/cow/day. We worked out a new ration for him plus encouraged him to feed hay free choice and to feed the higher producers more grain. He reported on 22 April that his cows were up three liters/cow/day in milk. Adding this to the estimated value of increased weight gain gives $1.10 \times 8 \times 30 =$ **264 Euro's increased net income per month**.

L. Rhame Xhema. Peja. 29 March 2005. Nine cows are producing 400 liters of milk = 21 liters/cow/day. Since he does not have a working lacto-fridge, he is making cheese that he sells at 2.2 Euro/kg. With a 9/1 conversion of milk to cheese this amounts to about 24.4 cents per kg of milk. This is not good. (I've been told his cheese yield is better than 9/1.) A lacto-fridge would allow him to sell his milk for about 30 cents and eliminate a whole lot of work. He has 5 Red Holsteins, 5 Brown Swiss and 9 Simmentals. He feeds alfalfa hay as the only forage. He also feeds dried malt which costs him 12 cents a pound. Wet malt costs 2 cents at the brewery. I did the ration evaluation and formulated a new ration for him that he said on 22 April that he would implement soon. There is no economic impact to report at this time.

M. Jetishi Dairy at Gjakova. 31 March 2005. Nineteen cows (11 Red Holsteins, 6 Brown Swiss and 2 Simmentals) on 31 March were producing 350 liters/day = 18.4 liters/cow/day. Cows a little thin. New rations were suggested at our visit and a complete recommendation was made the next day followed by some adjustments for use with wet malt. Argeont Jetishis reported that milk production is up 4.5 liters/cow/day on 26 April. This would mean a benefit of 90 cents plus the weight gain expected of 50 cents equals **1.4 Euros x 19 = 30 = 800 Euros/month.**

N. Berisha Dairy near KEK coal factory outside Prishtina. Twenty-two Simmental cows are producing 320 liters of milk (40 goes to calves) = 14.5 liters/cow/day. After learning what they were fed, it is fortunate that there is not higher production and the high outgo of calcium that more milk would entail. Cows are fed bran and nothing else. There is no salt, no limestone, no vitamins and mineral – nothing. The high level of wheat bran put up a red flag about high phosphorus. The ratio of absorbed calcium to phosphorus to calcium is about 1 to 2. This is bad as absorbed calcium should be above absorbed calcium to prevent demineralization of the skeleton. We gave a suggested ration while we were there and they said they would buy limestone, salt, vitamins and minerals, corn and soybean that weekend. To date, this has not happened. I have written them a letter explaining the concern I have for the calcium and sodium deficiency as well as protein inadequacy in hopes that they will make the changes necessary to prevent disaster in this herd and to increase milk production and profit. There is no economic impact to report as they haven't made any changes.

O. Mujoto Dairy at Shtime. This is a new dairy with some of the best facilities I've seen in Kosovo. Twenty lactating cows (1 Red Holstein, 11 Simmentals and 8 Brown Swiss) are producing 360 liters = 18 liters/cow/day. Cows were not fed hay or corn silage free choice. We returned with a new ration which we mixed in his barn with a shovel. Cows started up in milk on the third or fourth day. On 22 April Bajran Mujoto said the cows were up three liters in milk. He said so on two television interviews at Luma Commerce after our seminar there. Economic impact would be 60 cents net from more milk plus 50 cents from improved body weight. $1.10 \times 20 \times 30 = 660$ **Euros per month increase in net income** on this farm after about two weeks of ration implementation - and counting. The French KFOR provided them with a lacto-fridge.

P. Isufi Dairy near Ferizaj. This dairy has 14 cows in lactation with 26 heifers freshening soon. It is a little difficult to get a base line here as some cows were almost dry and the amount of milk produced didn't jive with what we saw later in his records. It appears that milk production was about 14 liters per cow/day. Cows were Montbeliarde and Brown Swiss. Both breeds are capable of producing a lot more milk than this. He was not feeding hay free choice. During our initial visit we modified his concentrate ration and urged him to feed more hay. Three days later milk production from about 11 cows had gone up over 30 liters. We gave him a new ration that he is feeding now but I don't have present production. One Isufi brother was at the Luma Commerce seminar and said to the audience how his cows had shown an immediate response from improved rations. On 15 April he reported 187 liters from 8 cows = 23.8 liters/cow/day. He dried up some low producers and his remaining cows were up in milk but it is hard to put a

number on the exact improvement. Preliminary economic impact appears to be three to five liters of milk (60 cents to one Euro) and 50 cents worth of weight gain = **$1.50 \times 8 \times 30 = \text{about } 360 \text{ Euros/month}$** . The actual impact will be much higher when the 26 heifers calve and all cows are fed better.

Q. Qerim Qerreti Dairy near Peja. Twenty-eight cows (Mostly Simmental and Black Bulgarian plus 2 Red Holsteins and 1 Brown Swiss) are giving 600 liters = 21.4 liters/cow/day. We recommended a new ration during our visit on a Thursday the 7th of April. We return on the next Monday for a seminar and cows were up about a liter/cow/day. If we postulate on what we've seen elsewhere, there should be an improvement of at least one Euro/cow/day = 840 Euros per month.

R. Sokol Mulaj Dairy, Peja. I met Sokol in June of 2003 with Arben when we both worked with CARE International. He is one of the persons feeding according to the formulas Arben had extracted from ones I had formulated for Kosovo. He was very satisfied with production of 120 liters from 5 cows = 24 liters/cow/day. He has whole soybeans that he raised and wanted a recommendation on how to feed them, which I have supplied. There is no economic impact to report at this time. It is hoped that he can squeeze a little more milk out of his cows by increasing attention to the top producers.

S. Gjilan. Dairyman where we had a seminar in early March began feeding soybean meal last Friday. By Monday he reported a milk increase of 11 kg from 4 cows. This would amount to about **72 Euros per month**. He'll need to feed some more energy along with the protein or cows will lose weight.

We have visited a few new dairies in the last several days so impact is not know. It looks like there is an impact to date of 15,000 to 17,000 Euros's/month from about 440 cows, which would be a little over a Euro/cow/day.

In addition, we have given ten seminars to about 150 dairymen that represent 1723 cows. Some of these are included in the above count. If they follow suggestions, 1200 cows could increase net revenue a Euro/day, which would be double the above benefit and could be added to the above benefit. This will take a lot of effort to effect.

A compendium of 216 rations has been prepared. If this can be distributed throughout Kosovo, it can have an impact of about a Euro/cow/day if the suggested rations are fed. I'll be interested in feedback from Arben during the next several months.

Milk production is expected to increase with time so the economic benefit of KAMP intervention can be assessed at that time. I'm optimistic of big numbers. Follow-up is important for continued success and evaluation. The above is a rough estimate.