

MARIE CURIE TRAINING SITES
FINAL SCIENTIFIC REPORT
(ANNEXED TO THE REQUEST FOR FINAL PAYMENT)

HOST FELLOWSHIP CONTRACT N° QLK5-CT-2001-60004

Period covered: Start date of 11/12/01 – End date of 21/10/05 (DD/MM/YY)
first fellow last fellow

Name of co-ordinator: Renate MAYER

Date: 31.01. 2006

Signature:

IMPORTANT

This report details the progress of the whole host fellowship. However, note that point 4 of the Report refers only to the period after the last Periodic Scientific Report.

It is to be completed and signed by the co-ordinator of the contract.

Attachments:

- The information requested in point 5
 - list of participation in conferences;
 - list of publications;
 - list of patents;
 - list of other outcomes;
- The detailed report requested in point 7, including copies of any relevant publications.

We welcome your feedback on how to improve the Marie Curie Fellowship scheme. This can be sent on a separate page. Make sure you include the contract number and fellow's name.

MARIE CURIE TRAINING SITE

The information given in this part of the report summarizes the work performed by all the fellows for the totality of the host fellowship period

1. IDENTIFICATION

HOST FELLOWSHIP	HOST INSTITUTION
<p>Proposal n° MCFH-2001-004</p> <p>Start date of contract: 22/10/01 (DD/MM/YY)</p> <p>End date of contract: 23/10/2005 (DD/MM/YY)</p> <p>Number of fellow-months awarded: 96</p> <p>Discipline:</p> <p><input type="checkbox"/> CHE <input type="checkbox"/> ENG <input checked="" type="checkbox"/> LIF <input type="checkbox"/> PHY</p> <p><input type="checkbox"/> ECO/SOC <input type="checkbox"/> ENV <input type="checkbox"/> MAT</p>	<p>Title and name of co-ordinator of the fellowship: Dipl.-Ing. Renate MAYER</p> <p>Institute: Agricultural Research and Education Centre Raumberg-Gumpenstein, Austria</p> <hr/> <p>Laboratory/Department: Acquisition</p> <hr/> <p>Tel: ++43-(0) 3682-22451-240</p> <p>Fax: ++43-(0) 3682-22451-210</p> <p>E-Mail: renafe.mayer@raumberg-gumpenstein.at</p>

2. RECRUITMENT SUMMARY

Please indicate in the table below the total fellow recruitment situation (*use more copies if necessary*)

	Name of the Fellow (as stated at time of selection)	Fellow n°.	Start date of project (dd/mm/yy)	End date of project (dd/mm/yy)	Duration of project
1.	Tomanova Olga	1, 4	11/12/01	11/12/02	12
2.	Slkadanka Jiri	2	08/01/02	08/05/02	4
3.	Junkuszew Andrzej	3	09/05/02	09/11/02	6
4.	Sliwinski Bogdan	5	11/11/02	10/11/03	12
5.	Dronzek Tomas	6	12/12/02	11/12/03	12
6.	Brüsemeister Frank	7	11/11/03	10/08/04	9
7.	Müller Martin	8	07/01/04	07/07/04	6
8.	Magyar Enikö Illona	9	11/07/04	10/07/05	12
9.	Adam Myriam	10	11/08/04	10/05/05	9
10.	Eickler Birgit	11	11/04/05	21/10/05	6,5
11.	Strzelec Ewa Halina	12	07/06/05	21/10/05	3,5

3. DESCRIBE THOSE ELEMENTS OF THIS FELLOWSHIP THAT YOU CONSIDER TO BE OUTSTANDING OR A SIGNIFICANT SCIENTIFIC CONTRIBUTION :

They young researchers did excellent work, wrote many publications and represented the Agricultural Research and Education Centre Raumberg-Gumpenstein at many national and international conferences, seminars and workshops as speakers and participants. They could consolidate in their doctoral thesis and explore the country side as well. They also presented posters to special topics and published their thesis. The HBLFA Raumberg-Gumpenstein arranged seminars with experts, where the young researchers could present and discuss their research activities. In sum, the fellowships were particularly fruitful for both sides, the fellows and the Research Centre. Many fellows discovered a new ecosystem, as mountains have been totally unknown for them. This experience is rich of learning experiences and mostly motivating in term of research interest.

The HBLFA Raumberg-Gumpenstein was represented at the Marie Curie Conference „*Making Europe more attractive for researchers*“, in Pisa and Livorno/ Italy from 28th until 30th September 2005 as participant and presented a poster and a proposal for the Conference Report.

The Marie Curie Fellow Ship was a technical and social enrichment for the Agricultural Research and Education Centre Raumberg-Gumpenstein as well as for the young researchers and for the acquirement of new international research networks.

4. Give a short summary of each fellow's achievements to date after the last Periodic Scientific Report

(use more copies of this page if necessary)

Fellow	Name: Magyar Enikő Illona	N°: 9	N°. months covered by report: 7
<p><i>“Analysis of herbs, especially medical herbs concerning their effect to floristic biodiversity in permanent grassland“</i></p> <p>Ms. Magyar was at the Agricultural Research and Education Centre Raumberg-Gumpenstein from July 2004 until July 2005. She took part in the grassland studies. The main objective of her program was to compare botanical compositions grew up in two different environments in Hungary and in Austria in addition with two different methods for fodder analysis like “WEENDEN” and “TILLEY and TERRY” to investigate on fodder qualities in 72 trials from Hungary. This experience offered here a wonderful environment and acquainted the excellent teamwork of Austrian researchers.</p> <p>During this one year of research training, she first gathered literature to get a better understanding of mountainous environment and grassland resources issues in this entity. Then, she contributed to the main projects carried out in the institute on influence of fertilization to the herbs species and dealing with the used records for botanical compositions in Gumpenstein. Over the growing season, Mrs Magyar observed the long-term experiment which is established at the HBLFA Raumberg-Gumpenstein (the botanical cover and diversity). It assessed the type of fertilization and the rate of mowing. She measured the high of grasses in the field and noticed the changing in the plant community. In the long-term experiment she investigated the influence of fertilization to the herbs species. She processed and analysed as well as to compare the data recorded in her similar experiments according to the different interventions and ecological conditions. She wrote several scientific articles and took part in different workshops and conferences.</p>			

Fellow	Name: Adam Myriam	N°: 10	N°. months covered by report: 5
<p><i>“Leaching losses under permanent grassland, field forage and winter catch crops”</i></p> <p>Ms. Adam worked in three main tasks: 2 projects for the institute regarding nutrients leaching, and work for her PhD, gathering literature review and developing a proposal for potential research for her doctorate She took part on several conferences for example a lysimeter excursion to Croatia and Slovenia organized by the Austrian Lysimeter group, and the Fourth European Mountain Convention organized by EUROMONTANA The research centre has an impressive soil water sampling instrument installation including monolithic, seepage water collector and gravitational lysimeters. Ms. Adam got the introductions to these systems and the different projects carried on this installation.</p> <p><u>In the first project</u> she worked on “nitrate leaching losses under permanent grassland, field forage and winter catch crops”. 6 seepage water collectors (lysimeter) were installed to determine nutrients’ leaching loads under 6 different agricultural systems suitable to alpine regions. She analyzed chemical data from soil water collected and determined the degree of nutrient leaching under each agricultural system. This study gave her and the researchers from the institute a broad understanding of nutrients loads under 6 recurrent agricultural systems in alpine regions. Results were summarized in the final report.</p> <p><u>The second project</u> from Ms. Adam was a comparison of nutrient leaching measured by 3 different lysimeter types. It assumed that amounts of seepage water collected and nutrients concentrations may fluctuate according to the instrument used for collection. Usually, installation of lysimeter measurement systems into soil introduce disturbance on the soils inside as well as outside lysimeters, which is thought to affect the percolation rate through the soil cover, and consequently affect the precision with which percolation rate was measured with lysimeter. Water collected may result from lateral flow as well as vertical flow, percolation rate may be disturbed and the artificial no-flow boundary of lysimeters may prevent upward and downward flow induced by evapotranspiration. From her first computation, she observed notable difference among the 3 lysimeter types.</p> <p><u>The third task</u> focused on her Ph.D. work as well, she gathered literature on mountains issues, <i>this</i> environment was new for <i>her</i>. She got better appreciation of major issues in mountainous issues Ms. Adam participated to the 4th European Mountain Convention organized by EUROMONTANA which was very valuable for this concern. As water resources she concentrated her research on studies in term of water resources in the mountains. Mountains are seen as “the water towers of the world”. Water from the mountains is assumed to be pure. However, as increase in population and tourism pressure on the mountains have contributed to major changes in land use and land cover patterns, there is a stress on water resources and a need to better understand the consequences of these changes to preserve what is called our “Blue Gold”. For her Ph.D., she addressed the effects of different land uses on biogeochemical processes and on water quality in mountainous regions.</p>			

Fellow	Name: Eickler Birgit	N°: 11	N°. months covered by report: 8
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“Legume-based forage systems for contrasting environments”

During her Research Training at the Agricultural Research and Education Centre Raumberg-Gumpenstein, Mrs Eickler worked on plant analyses of forage legumes of both study sites by in vitro methods.

Grass-legume mixtures play an important role for protein supply of cattle and for providing nitrogen via biological N-fixation. Forage quality and digestibility are highly variable and mainly depend on plant utilisation, stage of development and legume species. On the basis of a common protocol field trials have been established in 2003 at study sites at the coastal area of Northern Germany as well as in the mountainous region of Austria. These trials include different mixtures of a single grass species (English ryegrass) with one of several clover species (white clover, red clover, bird’s-foot trefoil) or alfalfa.

Objectives of the current research and plant analyses were focused at

- impacts of the location due to differences in growth conditions between the study sites
- changes of forage quality during growing season
- impacts of the legume species itself on protein quality and digestibility
- comparison of common analytical methods for the determination of ruminal digestion

Further on, research aims at possible effects of special secondary plant components on the ruminal protein digestion, especially regarding red clover.

Ms. Eickler represented the Agricultural Research and Education Centre Raumberg-Gumpenstein at the 3rd international COST Action 852-WG 3 Meeting in Grado / Italy on November 2003 and made two presentations with the titles: “Productivity of legume/grass mixtures in mountainous regions in Austria” and Influence of secondary plant components on protein quality and digestibility of forage legumes.

Fellow	Name: Strzelec Ewa Halina	N°: 12	N°. months covered by report: 6
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“Economic parameters of boer goat breeding keep them indoor and on pasture”

The goat project from Strzelec Ewa undertaken by HBLFA Raumberg-Gumpenstein concerned few topics: establishment of the economic parameters of boer goat breeding under alpine conditions, economic solutions for boer breeders and agricultural advisors, who need the necessary economic calculations, product quality and the method of obtaining the final product, evaluation of quantity and quality of goat meat for the requirement or the consumers

Test of two production systems: indoor and pasture

The boer goats flock contained 30 goats and 2 bucks at the beginning.

The focal points were: Feed intake and feed conversion of does and kids, Fertility and rearing performance due to indoor or pasture keeping, carcass composition – meat, fat and bone content, proportions of cuts, meat quality (due to indoor and pasture keeping) – concerns several characteristics: protein content, fat content, meat color, tenderness, cooking features and sensory parameters

The project began in 2002 and has been finishing in 2005. The boer goats flock contained 30 goats and 2 bucks at the beginning. Animals were separated into 2 groups: “indoor group” and “pasture group” as well.

The indoor group was kept all the year in stable having only small paddock nearby. Hay was given *ad libitum* all the year and concentrate was given only during first five weeks after kidding. The pasture group was maintained in stable in the wintertime (similarly to the stable group) and during the vegetation period animals were on pasture, being kept on several paddocks for maximum 1 week on each.

The activities taken in the research have been to collect the data of feed intake of boer goats in different performance stages, e.g. lactation, high pregnancy and low pregnancy, as well as milk yield of lactating does, due to indoor and pasture groups. Moreover, data of fattening and slaughter performance of kids in different final slaughter weights (due to the experimental group) have been collected.

Feed intake and feed conversion of does and kids: Botanical composition on pasture was evaluated using trial cuts from paddocks both before and after grazing time. Question was how the botanical composition was changing during few years of experiment. Due to the indoor group, the amount of fodder eaten by does and kids was evaluated as well. Kids were kept till the slaughter weight of 18 kg with mothers. One group of kids was weaned at approx. 18 kg of live weight and then slaughtered. The second group of kids after weaning time was reared and fattened till the approx. 30 kg of final body weight and then slaughtered. Kids were weighted once a week and had got free access to the concentrate. Following traits were taken to evaluate the reproduction performance of does: number of kids per kidding, total birth weight, birth weight per kid and per gender, effect of group (indoor/pasture) on birth weight per kid and total birth weight, percentage of dead born

and reared kids.

Ms. Ewa Strzelec represented the HBLFA Raumberg-Gumpenstein at the Marie Curie Conference in Pisa/
Italy

5. RESEARCH RESULTS RELATED TO THE HOST FELLOWSHIP: (Summarize the results obtained during the whole host fellowship). Use more copies of this page if necessary.

FELLOW NAME AND N°	N° CONFERENCE PARTICIPATION*		N° WORKSHOPS*	N° SEMINARS*	N° PhD COURSES*	N° PUBLICATIONS*				Submitted	Manuscripts in preparation	
	Passive	Active				Peer Reviewed (incl. in press)						Non-Peer Reviewed (incl. in press)
						Articles in Journals	Chapters in Books	Articles in Conference Proceedings	Books and Monographs			
Tomanova Olga 1, 4		1	2	2			19	1	1			
Skladanka Jiri 2	2			1							3	
Junkuszew Andrzej 3			1			1					1	
Slivinski Bogdan 5							81					
Dronzek Tomas 6					1					1		
Brüsemeister Frank 7				1								
Müller Martin 8	3		4	3								
MagyarEnikő Illona 9	1	2	5	3		4		2		1		
Adam Myriam 10	4	2		1	1	2		4				
Eickler Birgit 11	2	1		1				3				
Strzelec Ewa Halina 12	1	1	1	1		2		2				1

*Please list for each fellow on a separate sheet. For conferences and publications use the classifications given.

6. PUBLISHABLE BRIEF SUMMARY OF ALL WORK PERFORMED DURING THE FELLOWSHIP AND RESULTS

This text should include all main keywords referring to the objectives and results of this project. It should be written clearly and concisely, and be understandable for the general public.

From December 2001 until December 2005, 11 young researchers (5 female, 6 male) took part at the Marie Curie Training Site at the Agricultural Research and Education Centre Raumberg-Gumpenstein. The fellows were at the HBLFA Raumberg-Gumpenstein for 96 months, fellowships from 4 to 12 months were offered. The young researchers came from Germany, France, Hungary, Poland, Slovakia, Czech Republic.

The Marie Curie Training Site was located at the Agricultural Research and Education Centre Raumberg-Gumpenstein in the Province of Styria in the middle of the Austrian Alps. Two interrelated groups of scientists, one dealing with grassland management and the other one with livestock production under alpine conditions formed a platform with the main purpose to find interdisciplinary, holistic and sustainable solutions to agricultural problems in mountainous regions. This two research groups offered the candidates studies in the areas of soil science, root science, plant production and –sociology, ruminant feeding, milk and meat production.

After signing the contract for the implementation of the Marie Curie Host Fellow Ship, entitled “*Solutions to agricultural problems in mountainous regions of Europe*”, the Agricultural Research and Education Centre Raumberg-Gumpenstein started with its first internal meeting to inform all potential supervisors and the support about the organisation and the criteria of the Marie Curie Training Site, the selection of fellows, following the criteria. Altogether 7 coordination meetings took place.

Then the HBLFA Raumberg-Gumpenstein started with the first publication of vacancies. The advertisements for the recruitment of fellows included the qualifications and experiences of the fellows in the special research field. The advertising were published on various homepages (for example University of Natural Resources and Applied Life Sciences, HBLFA Raumberg-Gumpenstein, Cordis). The selection of the fellows started under the observance of the selection criteria. After getting the confirmation of the selected fellow (s) we informed them and they got the instructions, signed the contract and then the conclusion of the agreement between the fellow and the HBLFA Raumberg-Gumpenstein were made. For some fellows from countries which weren't members of the EU, we had to acquire the Right of Residence (third country citizen). The accommodations were available for all PhD Students from the HBLFA Raumberg-Gumpenstein and for all fellows the necessary resources and equipment were available to support the project. The HBLFA Raumberg-Gumpenstein offered fully furnished apartments close to the centre. The young researchers had the possibility to use all infrastructure and the HBLFA Raumberg-Gumpenstein, PC's with internet connection, an owned a up to date library. The research centre supported different activities for example the transport of samples. Each fellow got further instructions from the support about payment, accommodation, insurance, edv etc. and technical support from the supervisor. The young students were supported from the staff of the HBLFA Raumberg-Gumpenstein whenever they had questions and problems.

Each 12 months the periodic scientific report and the financial report were sent to the European Commission. It included the activity reports and short summaries of each fellow's achievements which were part of the Marie Curie Training Site in this period and the Financial Report with the request of the periodic payment.

Since September 2004 a new coordinator were assigned to manage the project MounTRAIN and since January 2005 the former Federal Research Institute for Agriculture in Alpine Regions (BAL) became a new status as Agricultural Research and Education Centre Raumberg-Gumpenstein with decree.

Each fellow wrote a Final report and some fellows who were at the HBLFA Raumberg-Gumpenstein during two periods, they wrote also a Progress Report and they made a presentation of their research activities (subject, objectives, results, view) during a special seminar for the doctoral candidates. 7 seminars were hold about the status

quo, the results and the benefit of the MounTRAIN project and the future activities. They took part in many national and international conferences, workshops, seminars, red papers and presented posters to special topics and also published their thesis. Some of the fellows took part in conferences and also presented their research activities and published some outcomes of their work at HBLFA Raumberg-Gumpenstein.

Benefit and impact of the research training for the fellows and the Agricultural Research and Education Centre Raumberg-Gumpenstein:

The proposed training provided the young students a very unique understanding of the problems that face agriculture in mountainous regions. This allowed the fellows to develop strategies that will help to create and maintain an economically successful, environmentally beneficial and sustainable agriculture in the mountains.

The Ph.D. Training widened the horizon of the candidates on very specific topics of agricultural research reaching from soil science, plant sociology and fodder production to milk and meat production, husbandry and housing of cattle, sheep and goats. The incentive to combine different disciplines in order to get a more sound and holistic solution to the proposed Ph.D. thesis was the biggest advantage of the Training Site. Up to date equipment, open minded scientists who are experienced in supervising international students and a close network of national and international

collaborations form an environment that motivated the students to make a supreme effort.

Studies that try to find solutions to wide range of problems that face agriculture in disadvantaged areas, especially mountainous regions.

- a very unique understanding of problems that face agriculture in mountainous regions
- allowed the fellows to develop strategies that helped to create and maintain an economically successful,
- environmentally beneficial and sustainable agriculture

The HBLFA Raumberg-Gumpenstein was represented at the Marie Curie Conference „*Making Europe more attractive for researchers*“, in Pisa and Livorno/ Italy from 28th until 30th September 2005 as participant and presented a poster and an abstract for the Conference Report (see Annex 7.4) and represented the project MounTRAIN at the Conference “*communicating european research*” (CER 2005) on 14th -15th November 2005 in Brussels. The HBLFA Raumberg-Gumpenstein wrote a short summary for the Research Report 2005 of the Federal Ministry of Agriculture, Forestry, Environment and Watermanagement and some articles which were published in local newspapers and the journal of the Federal Ministry of Agriculture, Forestry, Environment and Watermanagement (Focus).

The young researchers could consolidate in their doctoral thesis and explore the country side as well, they were integrated into a friendly and cooperative atmosphere and motivated them for new incentives.

Besides the technical benefit for the young researchers, the Marie Curie Fellow Ship was also a technical and social enrichment for the Agricultural Research and Education Centre Raumberg-Gumpenstein as well as for the acquirement of new international research networks. The feed back from the young researchers was very positive.

The intention was to thank the Research and Education Centre Raumberg-Gumpenstein for lending its helping hand, the friendly leniency, the willingness and interest and finally for not letting the fellows feel like foreigners among them. They liked also to express their gratitude for enormous hospitality.

7. REPORT ON WORK PERFORMED AND RESULTS

Please report clearly and concisely on the work performed during the whole fellowship and on the results of the research using the following structure:

7.1 Introduction: general objectives. (Max. 1 page)

7.2 Concise description of the individual training. Give the following information on the accomplishment of each of the fellow's training: (Max. ½ page per fellow)

- List specific training received by the fellow on scientific and technical aspects;*
- Summary of any research projects carried out, (if applicable);*
- Impact of the training on the PhD studies;*
- List any outcomes such as further academic qualifications, computer programmes, patents, techniques, designs, prizes, awards, media coverage, etc.*

7.3 Conclusion: Explain how do the outcomes of the training match the original expectations. (Max. 1 page)

In order to help illustrate the work carried out during the fellowship, please enclose copies of the most relevant publications as well as abstracts of other publications and manuscripts. Note that this is in addition to the free-hand report requested above.

8. ACHIEVEMENTS AND SUCCESS OF THE FELLOWSHIP

8.1. Feasibility of the overall host fellowship a) It ran as originally planned b) Some minor modifications were needed c) Major modifications were needed	<input checked="" type="radio"/> <input type="radio"/> <input type="radio"/>
8.2. If you answered b) or c) to question 7.1., were the modifications due to a) insufficient resources and/or team support in the host institution? b) the individual projects being too ambitious and technically complex? c) unforeseen problems? Please, in this case, include a detailed description of the modifications in the report (point 7).	<input type="radio"/> <input type="radio"/> <input type="radio"/>

9. TRAINING ENVIRONMENT AND ASSESSMENT OF THE FELLOWS**9.1. Rate the benefit of participating in this training site for each fellow's PhD** *(use more copies of this table if necessary)*

	Fellow Name and N°	Not beneficial	Very beneficial
1.	_____ Tomanova Olga _____		5
2.	_____ Sladanka Jiri _____		3
3.	_____ Junkuszew Andrzej _____		4
4.	_____ Sliwinski Bogdan _____		5
5.	_____ Dronzek Tomas _____		4
6.	_____ Brüsemeister Frank _____		4
7.	_____ Müller Martin _____		4
8.	_____ Magyar Ilona Enikö _____	3	
9.	_____ Adam Myriam _____		5
10.	_____ Eickler Birgit _____		5
11.	_____ Strzelec Ewa _____		5

(ONLY FOR MULTIPARTNER TRAINING SITES)

9.2. The relationship among the partners within the training site a) worked as originally planned b) worked as originally planned with some minor modifications c) needed significant modifications If b or c, include a detailed description of the modifications in the report (point 7).	<input type="radio"/> <input type="radio"/> <input type="radio"/>
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