2012- N°2

NEWSLETTER

31TH OCTOBER, 2012

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Ongoing Selection Process

◊ **Sept—Nov 2012**

Call for candidates

◊ **Dec-Feb 2013**

Validation of applications, interviews of the best candidates, selection

◊ **April 2013**

Publication of the main list of doctoral candidates and of the reserve list

◊ **September 2013**

Start of the PhD projects

COORDINATOR'S WORD

EGS-ABG is pleased to welcome the second group of PhD candidates, who started the program last September. In this issue, these candidates present their background and their PhD project.

The first group of candidates is on tracks and the first EGS-ABG publications were presented in some congresses. Eventually, one poster was awarded during the last EAAP meeting, in Bratislava (see the present issue): congratulations to Gabriel who presented this successful poster!

Currently, animal breeding jointly benefits from valuable opportunities (e.g., genomic tools, internationalization, ...) and faces significant challenges (e.g., sustainable breeding, contribution to the increase of the demand in animal products, biodiversity, ...). The set of ongoing PhD projects (Groups 1 and 2) and the set of projects scheduled to start on September 2013 reflect this situation. At its scale, EGS-ABG is expected to contribute to the development of new methods to benefit from the genomic information, and to provide some scientific answers to the current adn future challenges.

Etienne Verrier, Coordinator

EGS-ABG INAUGURATION CEREMONY—PARIS, JUNE 2012

On June 21, 2012, an EGS-ABG communication event took place at AgroParistech. This event was jointly organized with the closing ceremony of the Master in Animal Breeding and Genetics. The participants In this event were EGS-ABG PhD candidates, Master students, AgroParisTech and INRA scientific staff, AgroParisTech administrative staff, representatives of the French animal breeding industry and a representative of the European animal breeding industry (EFFAB).

During the brief talks and discussions, emphasis was put on the value of international mobility during a PhD program, the need of well trained doctors in the field of animal breeding and genetics, for both the academic and the industry sectors, and the interest of long run collaboration between both sectors.

This event was a good opportunity of warm exchanges between the participants, benefiting from good facilities on the terraces AgroParisTech and a beautiful weather. That day, ran the "Fête de la musique", a national yearly event. Then, after the EGS-ABG event, the participants had the opportunity to walk in the streets of paris, enjoying various kinds of music, until late in the night ...

Photo: Belèn Jimenez Mena

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THE DOCTORAL CANDIDATES FOR 2012-2016 AND THEIR PHD PROJECT

WELDERUFAEL Berihu Gebremedhin

« **Genetic evaluation for resistance to and ability to recover from mastitis** », *Swedish University of Agricultural Sciences—Aarhus University*

« I am from Ethiopia, where I obtained BSc degree in Animal Sciences at the Alemaya University. I did MSc in June 2009 in the European Master in Animal Breeding and Genetics (EM-ABG) supported by the Erasmus Mundus Scholarship. Since then I have been working in Mekelle University, department of Animal, Rangeland and Wildlife Sciences as a Lecturer in the undergraduate program and as a Post graduate program Coordinator. ».

SHRESTHA Merina

« **Identification of the causative genes and mutations for the complex trait insect bite hypersensitivity in the horse** », *Swedish University of Agricultural Science–Wageningen University*

« I am from Nepal and completed my bachelor in Biotechnology from Kathmandu University, Nepal. I obtained a master degree in Animal Breeding and Genetics (EMABG) from Norwegian University of Life Science and Swedish University of Agricultural Science. An idea of application of both quantitative and molecular sector of genetics excited me the most in this project and I am looking forward to work on this project ».

LE Hong Thu

«**Breeding for stronger sows: association between leg weakness, fertility and *mothering ability of sows*** », *Swedish University of Agricultural Sciences—Aarhus University*

« I had done my Bachelor in Animal Biotechnology Lab in Vietnam National University til 2009; then I got the Erasmus Mundus scholarship to study Animal breeding and Genetics. I graduated from Master program in 2012 with the thesis concerning the correlation between feed efficiency and feeding behavior in pigs. I am keen on Animal Health and Welfare, as well as how to improve the production of the animal herd without causing the decrease in their health and welfare. My PhD program tries to investigate the association between leg weakness, fertility and mothering ability with the perspective of exploring alternative breeding scheme for stronger sows *».*

MAO Xiaowei

«**Population level genome wide association studies in dairy cattle** », *Aarhus University-Swedish University of Agricultural Science*

«I *come from China and got my Bachelor in Biology in China Agricultural University. In 2010 I was enrolled in EM-ABG MSc program, spending my first year in Wageningen University and second year in University of Natural resources and Applied life Sciences in Vienna. I fell in love with the flowing of Knowledge in Erasmus Mundus program and look forward to sharing and learning during my PhD project on genome-wide association study in dairy cattle. ».*

BESSON Matthieu

«**Using life cycle assessment to design breeding programs in aquaculture that balance productivity with environmental sustainability** », *Wageningen University—AgroParisTech*

« Hello! I am from France, I have a Bachelor in Marine Biology from the University of La Rochelle (France) and a Master in Animal Breeding and genetics from AgroParisTech (France) and the Norwegian University of Life Sciences (Norway). I worked with optimization of fish breeding programs during my master and my PhD project concerns the utilization of life cycle assessment to design breeding programs in aquaculture. »

EGS-ABG ALSO WELCOMES A NEW ADDITION TO THE GROUP 1

ISMAEL Ahmed

"Genetic Variation in sensitivity to environmental changes in dairy cattle", *Aarhus University—Swedish University of Agriculture Sciences*

My name is Ahmed, and I am from Egypt, where I graduated and obtained my master degree from the Faculty of Agriculture—Cairo University. During my master study I was also working as a lecturer assistant at the department of Animal Sciences at the Faculty of Agriculture. My Master study was a simulation study to estimate the expected genetic gain and inbreeding resulted from applying multiple generations open nucleus scheme in Egyptian buffalo. My project here started almost one year ago, and the main hypothesis is that Fertility of Nordic dairy cattle breeds (Holstein, Red, Jersey) is a complex trait and the heritability estimates of these traits are low and ranging from 0.02—0.04. Furthermore, the expression of the trait is very sensitive to environmental factorsan it is affected by the interaction between genotype and environment (GxE). The aim of the study is to develop a method to detect the environmental sensitivity as the GxE effect in Denmark and Sweden.

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EGS-ABG FALL SCHOOL & WELCOME SESSION 2012

In September 2012 was organised the annual Welcome session and EGS-ABG Fall School Session in the Research Center of Foulum (Aarhus University, Denmark). The newly selected doctoral candidates gathered for the first time and met their fellow EGS-ABG candidates, as well as their supervisors and the Consortium members.

The Welcome Session was designed to introduce the doctoral candidates to the EGS-ABG program and, through lectures and presentations, to give them the best tools to lauch their doctoral research and to reflect on Animal Breeding and Genetics.

This year, the EGS-ABG Fall School was focused on the topic : « Animal Breeding & Society ». The second year PhD candidates, their supervisors and members of the Consortium were able to participate in scientific conferences, technical conferences with representatives from the animal breeding industry, and personal and group work on communication toward society.

Alongside the lectures, all participants had the opportunity to visit the Randers Rain Forest.

Photo: Irene Van Den Berg

THE DOCTORAL CANDIDATES' POINT OF VIEW

Photo: Ahmed Ismael

It was a great moment to meet with the other PhD candidates again. All PhD candidates immediately bonded together.

It was all about sharing! Sharing experiences between the first and second group of PhD candidates, sharing impressions and information with all supervisors involved in our projects, sharing knowledge throughout the week with experienced researchers.

It was all done by the people for the people! The scientific program was designed in a broad way and accomplished its goals by enabling contact with industry; approaching and tackling ethical issues around society's demands; creating awareness about our genetic resources, and suggesting solutions to create sustainable animal breeding in the future.

It was all about discovering! Discovering the city of Viborg, and its nice restaurants; discovering the research facilities at Foulum, and its robotic technology; discovering successful examples of breeding at the farm level as well as for conservation of genetic resources, such as at the Rain Forest.

It was all about tomorrow! This intense training week gave PhD candidates a sense of what is expected of the next generation of scientists; on how to perform and defend the usefulness of their researches; on how important is it to integrate different views, and work together with different groups to create a better future.

Photo: Irene Van Den Berg

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EGS-ABG PHD CANDIDATES IN MOTION

CONFERENCE

In the last meeting of the European Association of Animal Science (EAAP) in Bratislava, Slovakia (August 27-31, 2012), three EGS-ABG PhD candidates presented the first results of their projects.

Sandrine Duchemin gave an oral presentation about "Genetic correlation between composition of bovine milk fat in winter and summer, and DGAT1 and SCD1 by season interactions" in the "Breeding and management for milk and product quality" session.

André Hidalgo gave an oral presentation about "Fine mapping of a QTL region for androstenone levels on pig chromosome 6" in the "Analysis of complex traits based on genome sequences and high density" session.

Gabriel Rovere presented a poster in the "Free communications in horse genetics" session, about "Genetic connections between dressage and show jumping in Dutch Warmblood horses".

Abstracts and more info about the meeting can be found at http://www.eaap2012.org/

BEST POSTER AWARD

A poster entitled "Genetic connections between dressage and show jumping in Dutch Warmblood horses" won the best poster award of the 63rd Annual Meeting of the European Federation of Animal Science (EAAP). The poster was also awarded by the Horse Commission for its graphic layout and scientific relevance. The conference took place in Bratislava, Slovakia, August 27- 31, 2012.

The poster, presented by Gabriel Rovere, showed the first results of the project "Sport horses: Breeding specialist from a single breeding program?" which started in 2011 with the first generation of EGS-ABG PhD candidates. The aim of the project, co-funded by the Royal Dutch Sport Horse Association (KWPN), is to provide recommendations for genetic improvement strategies in sport horses with emphasis in two disciplines: show-jumping (JH) and dressage (DH). During the last decades a process of specialization in breeding decisions has occurred, and thus the genetic base might become stratified. Such stratification may affect genetic connectedness, and consequently, the prediction of breeding values of traits that are measured in both groups of horses or only in one of them. The study estimated the connectedness between show jumping and dressage subpopulations of the current generation of horses registered by KWPN. To estimate the connectedness, ancestors were traced back as far as possible in the pedigree to define the base generation. Subsequently the base generation was divided into 3 base groups according to having only descendants in JH, in DH or in both subpopulations. Results obtained showed that Show Jumping and Dressage horses have a large part of their genetic base in common. However, an increasing percentage of animals receive genetic contributions from "specialist" genetic groups within the genetic base, and this trend is more profound in the jumping discipline. This project is supervised by Professors Bart Ducro (Wageningen University, The Netherlands) and Per Madsen (Aarhus University, Denmark). More information can be found at http://www.eaap2012.org/.

The EGS-ABG staff is happy to congratulate Gabriel for this award.

PUBLICATION

Sandrine Duchemin will shortly publish in the *Journal of Dairy Science* an article entitled « Genetic correlation between composition of bovine milk fat in winter and summer, and *DGAT1* and *SCD1* by season interactions. » , co-authored by H. Bovenhuis, W. M. Stoop, A. C. Bouwman, J. A. M. van Arendonk, and M. H. P. W. Visker. This is the first EGS-ABG paper to be published.

Photo: Irene Van Der Berg

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