

---

# XIII INTERNATIONAL CONGRESS IN ANIMAL HYGIENE ISAH-2007

---

June 17–21, 2007, Tartu, Estonia



ANIMAL HEALTH, ANIMAL WELFARE AND BIOSECURITY

---

PROCEEDINGS VOLUME I

# XIII INTERNATIONAL CONGRESS IN ANIMAL HYGIENE

**June 17–21, 2007, Tartu, Estonia**



## **“ANIMAL HEALTH, ANIMAL WELFARE AND BIOSECURITY”**

### **PROCEEDINGS VOLUME 1**

Editor: A. ALAND

Organised by

International Society for Animal Hygiene  
and  
Institute of Veterinary Medicine and Animal Sciences,  
Estonian University of Life Sciences

Tartu 2007

## **Scientific Committee**

**Prof. Pal Rafai**, Szent István University, Budapest, Hungary  
**Dr. Francois Madec**, French Agency for Food Sanitary Safety, Ploufragan, France  
**Dr. Stefan Gunnarsson**, Swedish University of Agricultural Sciences, Skara, Sweden  
**Prof. Steinar Waage**, Norwegian School of Veterinary Science, Oslo, Norway  
**Prof. Hannu Saloniemi**, University of Helsinki, Helsinki, Finland  
**Prof. Daniel Berckmans**, Catholic University Leuven, Heverlee, Belgium  
**Dr. Jan Tind Sørensen**, Danish Institute of Agricultural Sciences, Tjele, Denmark  
**Dr. Arvo Viltrop**, Estonian University of Life Sciences, Tartu, Estonia  
**Prof. Leo den Hartog**, Wageningen University/Nutreco, Boxmeer, The Netherlands  
**Prof. Reinhard Böhm**, University of Hohenheim, Stuttgart, Germany  
**Dr. Bert Lambooij**, Wageningen University, Lelystad, The Netherlands  
**Dr. Andres Aland**, Estonian University of Life Sciences, Tartu, Estonia

## **Scientific Office ISAH-2007**

Assoc. Professor Andres Aland  
Dept. of Animal Health and Environment  
Institute Of Veterinary Medicine and Animal Sciences  
Estonian University of Life Sciences  
Kreutzwaldi 62  
51014 Tartu, Estonia  
Phone: +372 7 313 221  
Fax: +372 7 313 706  
E-mail: Andres.Aland@emu.ee

## **Congress Secretariat ISAH-2007**

Frens Conference Services  
Toompuiestee 30  
10149 Tallinn, Estonia  
Phone +372 697 9290  
Fax +372 697 9295  
E-mail: conference@frens.ee

Selected papers will be placed on the website of Feedinfo News Service: [www.feedinfo.com](http://www.feedinfo.com)

ISBN 978-9949-426-29-4  
ISBN 978-9949-426-30-0 (vol.1.)  
ISBN 978-9949-426-32-4 (vol.2.)

Estonian University of Life Sciences  
Tartu 2007

**The scientific content and standard of the papers is the sole responsibility of the authors**

## **ISAH-2007 Organizing Committee**

- **Andres Aland**, chairman, Estonian University of Life Sciences
- **Toomas Tiirats**, co-chairman, Estonian University of Life Sciences
- **Jaan Praks**, Estonian University of Life Sciences
- **Väino Poikalainen**, Estonian University of Life Sciences
- **Arvo Viltrop**, Estonian University of Life Sciences
- **Piret Kalmus**, Estonian University of Life Sciences
- **Merle Valdmann**, Estonian University of Life Sciences
- **Andres Valdmann**, Estonian University of Life Sciences
- **Mati Roasto**, Estonian University of Life Sciences
- **Katrin Alekand**, Estonian Veterinary Association; Tartu Agro
- **Siret Dreyersdorff**, Food and Veterinary Department, Ministry of Agriculture
- **Maarja Kristian**, Animal Health and Welfare Department, Veterinary and Food Board

## **ISAH Executive Board**

- **President**
- Prof. Dr. Thomas Blaha, School of Veterinary Medicine Hannover, Germany
- **The 1st Vice-president**
- Prof. Dr. Bo Algers, Swedish University of Agricultural Sciences, Sweden
- **The 2nd Vice-president**
- Assoc. Prof. Andres Aland, Estonian University of Life Sciences, Estonia
- **The Secretary General**
- Dr. Francois Madec, French Agency for Food Sanitary Safety, France
- **The Treasurer**
- Prof. Dr. Ir. Martin Tielen, Utrecht University, The Netherlands; President of European Feed Manufacturers' Federation (FEFAC), Brussels, Belgium

**Extended Executive Board:** Representatives from 48 countries

## **Sponsored by**

### **MAIN SPONSORS**

- DUPONT ANIMAL HEALTH SOLUTIONS / AS REMEDIUM
- CITY OF TARTU
- EESTI MAAÜLIKOO -ESTONIAN UNIVERSITY OF LIFE SCIENCES
- EESTI PÖLLUMAJANDUSMINISTERIUM – MINISTRY OF AGRICULTURE
- OÜ ALLTECH EESTI

### **MAJOR SPONSORS**

- ANIMAL BREEDERS ASSOCIATION OF ESTONIA
- AS DELAVAL
- AS DIMELA
- LANTMÄNNEN
- OLMIX
- AS UHTNA TALUTEHNIKA
- VIRBAC S.A.

### **SPONSORS**

- OÜ ANU AIT
- OÜ EST-DOMA
- ESTONIAN DAIRY ASSOCIATION
- ESTONIAN VETERINARY ASSOCIATION
- AS FARM PLANT EESTI
- AS INTERCHEMIE WERKEN DE ADELAAR EESTI
- AS KEMIRA GROWHOW
- OÜ KRISOSTOMUS RAAMATUKAUPlus
- AS MAGNUM VETERINAARIA
- AS QUANTUM EESTI
- VETCARE LTD.
- OÜ ZOOVETVARU

## FOREWORD

On behalf of both the Organising Committee and the Scientific Committee, I am pleased to welcome you in Tartu, Estonia, to participate at the XIII International Congress of the International Society for Animal Hygiene (ISAH).

The ISAH ([www.isah-soc.org](http://www.isah-soc.org)) was founded in 1970 and has today members from 48 countries throughout the world. ISAH can be considered as a group of scientists contributing to efficient, sustainable animal farming with healthy animals, providing wholesome food in a sound environment.

Veterinarians and non-veterinary academic scientists (animal science, agricultural economics, engineers, microbiologists, public health professionals, epidemiologists etc., etc) and respective professionals in animal husbandry, who work and/or do research and education in the field of animal hygiene, can apply for a membership of ISAH, and are most welcome to attend ISAH congresses.

The first ISAH congress was held in Budapest in 1973. The last ISAH main congress took place in Warsaw, Poland in 2005 and the last in-between symposium in Saint-Malo, France in 2004.

Starting from Warsaw congress in 2005, the ISAH, considering the need for a more flexible and frequent exchange of scientific and practical knowledge, organizes its congresses every second year.

The present, XIII ISAH congress in Tartu, Estonia, in June 17–21, 2007 is organised under the device "**Animal health, animal welfare and biosecurity**".

The scientific programme, trying to follow the scope of the ISAH and receive the feedback from modern animal husbandry and food production, concentrates with more profoundness on the following subjects: interaction between the environment and health and welfare of individual animal and herds; managing animal health in large dairy units; ensuring animal welfare during transportation and slaughter; economical implications considering animals' health; possibilities of precision livestock farming in maintaining good health and welfare of animals; measures for prevention the development and spread of diseases and pathogens in animals including those posing risk to human health (zoonoses); food safety relevant infections and contaminations such as residues in food derived from animals; influence of the animal production on the environment and public health.

The Proceedings from the XIII ISAH Congress are herewith presented. The papers on lectures from invited speakers, oral and poster presentations from 11 parallel sessions are included in this excellent compilation. In general, the printed contribution to the ISAH-2007 congress illustrates clearly the broad scientific field of the ISAH and related to it activities.

I hereby would like to express my most sincere gratitude in the address of ISAH-2007 organising and scientific committees. Special thanks go to Frens Conference Services for their excellent organizational and technical contribution and to AS Triip for their outstanding printing job of these proceedings. We also appreciate different companies and organisations for their considerable financial support which gave us the opportunity to keep the registration fees affordable.

Finally, we thank all participants, contributors, chairpersons, organisational and technical assistants for your considerable efforts – you made the ISAH-2007 in Tartu real success.

We wish you all interesting and pleasant congress and enjoyable stay in Tartu.

A. Aland  
Editor  
Chairman of the ISAH-2007 Organising Committee



# **CONTENTS**

## **Sunday, June 17, 2007**

### **PLENARY LECTURE**

Herd health management and quality risk control on large dairy farms .....	3
<i>Noordhuizen, J.P., Cannas da Silva, J.</i>	

## **Monday, June 18, 2007**

### **PLENARY LECTURES**

The growing role of animal hygiene for producing food of animal origin.....	15
<i>Blaha, T.</i>	

Animal health, animal welfare, biosecurity and environmental protection as major components of sustainable animal production .....	21
<i>Köfer, J.</i>	

The "hygiene package" – a new approach to food safety .....	24
<i>Dwinger, R. H., Golden, T. E., Hatakka, M., Daelman, W.</i>	

Threats and new trends in preventing epizootic diseases in livestock and poultry in the European Union.....	31
<i>Vannier, P.</i>	

New trends in animal welfare .....	39
<i>Webster, J.</i>	

## **PARALLEL SESSIONS A1, A2, A3**

### **A1 – IMPACT OF ENVIRONMENT ON CATTLE BEHAVIOUR, HEALTH AND PERFORMANCE**

#### **ORAL PRESENTATIONS**

Impact on and demands for health and welfare of range beef cattle .....	51
<i>Ekesbo, I.</i>	

Alley-floor design, claw lesions and locomotion in Swedish loose-housed dairy cattle .....	58
<i>Hultgren, J., Telezhenko, E., Bergsten, C., Magnusson, M., Ventorp, M.</i>	

The feeding behaviour of dairy cows and their welfare .....	65
<i>Ivetić, A., Grubic, G.</i>	

Claw lesions of the dairy cattle in Tabriz area in Iran .....	69
<i>Mousavi, G., Rezaie, A., Hassanpour, A., Amoughli Tabrizi, B.</i>	

Effect of winter housing facilities on animal hygiene, somatic cell score and mastitis incidence ....	72
<i>O'Driscoll, K., Boyle, L., French, P., Meaney, B., Hanlon, A.</i>	

Influence of digital dermatitis and sole ulcer on dairy cow behaviour and milk composition.....	78
<i>Pavlenko, A., Ekesbo, I., Thierfelder, T., Bergsten, C., Lidfors, L.</i>	
The virtual farm .....	80
<i>Tuovinen, V., Kauppinen, R., Manninen, U., Mononen, J., Martiskainen, P., Saloniemi, H.</i>	
Microclimate in cowsheds in Finland and Estonia .....	83
<i>Teye F., Hautala M., Pastell M., Praks J., Veermäe I., Poikalainen V., Pajumägi A., Kivinen T., Ahokas J.</i>	
Influence of milk feeding methods on the welfare of dairy calves.....	89
<i>Lidfors, L.</i>	

#### **POSTER PRESENTATIONS**

Using copper sulphate, peracetic acid or a combination of both in foot bath for the control of digital dermatitis and heel horn erosion in dairy cows .....	96
<i>Bergsten, C., Hultgren, J., Hillström, A.</i>	
About development of the model of influence of biologically active substances on the resistance and efficiency of bulls .....	97
<i>Cherny, N., Botsman, V., Besh, M., Ivanov, V.</i>	
Behaviour of dairy cows in the waiting area of large uninsulated cowsheds .....	104
<i>Dijkstra, C., Veermäe, I., Praks, J., Poikalainen, V.</i>	
The bacterial flora in the teat duct of ewes can protect against and can cause mastitis .....	110
<i>Fragkou, I.A., Mavrogianni, V.S., Cripps, P.J., Gouglou, D.A. Fthenakis, G.C.</i>	
Effects of lamb sucking on the bacterial flora of teat duct and mammary gland of ewes.....	119
<i>Gouglou, D.A., Kyriazakis, I., Tzora, A., Taitzoglou, I.A., Skoufos, J., Fthenakis, G.C.</i>	
Chemical composition and energetic value of corn and Sudan grass silage added with molasses and bovine faeces .....	127
<i>Guerra Liera, J.E., Riveros Acosta, B.J., Gastelum Delgado, M.A., Córdova Izquierdo, A., Rodríguez García, J., Soto Angulo, L.E., Moreno Quiroz, J., López Juárez, L.A., Corrales Aguirre, J. L., Baca Martínez, S.</i>	
Nutritional characterization of forage trees for ruminants feeding: identification, intake preference and tree density (advances) .....	132
<i>Guerra Liera, J.E., Riveros Acosta, B.J., Gastelum Delgado, M.A., Córdova Izquierdo, A., Rodríguez García, J., Soto Angulo, L.E., Moreno Quiroz, J., Corrales Aguirre, J.L., López Juárez, L.A., Gutiérrez Sánchez, N.A., Barrón Olea, I., Medina Gutier, C.H.</i>	
Milk production in Swedish primiparous dairy cows associated with calfhood rearing and health.....	137
<i>Hultgren, J., Svensson, C.</i>	
Theileriosis and babesiosis in cattle: haemogram and some biochemical parameters .....	143
<i>Hussein, A.H., Mohammed, N.A.-E.-S., Mohammed, H.K.</i>	
Effects of grazing on the performance and behaviour of beef bulls.....	151
<i>Huuskonen, A., Tuomisto, L., Jansson, S., Martiskainen, P., Ahola, L., Kauppinen, R.</i>	

How behaviour predicts acute endotoxin mastitis in dairy cows? .....	157
<i>Hänninen, L., Kaihilahti, J., Taponen, S., Hovinen, M., Pastell, M., Pyörälä, S.</i>	
Milking procedures having an impact on milk SCC .....	162
<i>Kiiman, H., Pärna, E., Kaart, T.</i>	
Physiological status of live-stock under the influence of abiotic environment factors .....	168
<i>Kozenko, O.V., Dvilyuk, I.</i>	
Selenium-dependent growth inhibition of mastitis pathogens in cow's milk.....	172
<i>Malbe, M., Atroshi, F., Saloniemi, H.</i>	
Cubicle dimensions affect resting-related behaviour, injuries and dirtiness of loose-housed dairy cows .....	175
<i>Martiskainen, P., Koistinen, T., Mononen, J.</i>	
Heavy metals pollution (Pb, Cd) and its influence on animals raised in a non-ferrous ore processing unit .....	181
<i>Mitrانescu, E., Tăpăloagă, D., Bianu, B., Simion, V., Butaru, D., Tudor, L.</i>	
Prevention of wolf and other large carnivore damages in Finnish livestock herds using livestock guarding dogs (LGD).....	185
<i>Otstavel, T., Vuori, K., Vainio, O., Valros, A., Saloniemi, H.</i>	
Performance and behaviour of dairy bulls raised at pasture and in an uninsulated barn .....	190
<i>Tuomisto, L., Huuskonen, A., Jansson, S., Martiskainen, P., Ahola, L., Kauppinen, R.</i>	

## A2 – IMPACT OF ENVIRONMENT ON PIGS BEHAVIOUR, HEALTH AND PERFORMANCE

### ORAL PRESENTATIONS

Epidemiological analysis and classification of the health status of pig herds – the herd health index (HHI) .....	199
<i>Dickhaus, C.-P., Meemken, D., Blaha, T.</i>	
Risk-based meat inspection and risk-based official controls as means for improving animal health and animal welfare .....	205
<i>Meemken, D., Blaha, T.</i>	
Relationships between lysine level in feed of weaners, acute phase protein and performances..	211
<i>Robert, F., Bebin, K., Foret R., Garrau, J.M., Guerriot, J.F., Boniface, P.</i>	
Methaphylactic treatment of piglets coccidioses with Baycox® 5%: effect on weight gain, diarrhoea – related morbidity, mortality during suckling and nursing and oeconomic efficience.....	221
<i>Busse, F.-W., Westphal, B., Eggelmeyer, F.</i>	
Study on the virulence and cross-neutralization capability of recent porcine parvovirus field isolates and vaccine viruses in experimentally infected pregnant gilts.....	227
<i>Zeeuw, E., Leinecker, N., Herwig, V., Selbitz, H.-J., Manteufel, J., Truyen, U.</i>	
Changes in calprotectin concentration in sow's milk throughout lactation .....	231
<i>Lallès, J.-P., Formal, P., Fagerhol, M.-K.</i>	

Improving air quality in piggery buildings ..... 237  
*Banhazi, T.*

The effect of a new style training program for farmers on pig health and performance ..... 242  
*Mul., M., van Riel, J., van der Meulen, J.*

## **POSTER PRESENTATIONS**

The impact of microclimate factors to pigs' health and performance ..... 246  
*Antoniu, S.C., Orășanu, A.*

An exploratory survey of lung lesions in culled sows ..... 250  
*Fablet C., Jolly J.P., Madec, F.*

Infection pattern in 12 pig farms differently affected by respiratory disorders ..... 253  
*Fablet C., Marois C., Rose N., Kuntz-Simon, G., Jolly J.P., Eono F., Eveno, E., Le Devendec L., Tocqueville V., Kobisch M., Madec F.*

The detection of *M. hyopneumoniae*, *P. multocida*, *S. suis*, *H. parasuis* and *A. pleuropneumoniae* in piglets at weaning in 5 farrow-to-finish farms ..... 257  
*Fablet C., Marois C., Rose N., Kuntz-Simon G., Jolly J.P., Dorenlor V., Eono F., Eveno E., Le Devendec L., Kobisch M., Madec F.*

Effect of brovaglukin on values of blood and productive qualities in pregnant gilts ..... 260  
*Golovko, V., Cherny, N., Momot, L., Silinska, E.*

The influence of pregnant sows' movement restraint on lymphocyte proliferation in sows and piglets ..... 266  
*Kulok, M., Madej, J., Bartkowiak, A.*

Effect of organic rearing system on pork quality and preference ..... 268  
*Liorančas, V., Bakutis, B., Januskevičiene, G.*

Air-borne microbe numbers in different housing conditions of rearing pigs ..... 274  
*Pavičić, Ž., Balenović, T., Popović, M., Valpotić, I., Biuk-Rudan, N., Valpotić, H., Ekert Kabalin, A.*

Preliminary investigation on the influence of air quality on the increase of piglet losses in the farrowing unit ..... 279  
*Pavičić, Ž., Balenović, T., Popović, M., Valpotić, I., Tofant, A., Valpotić, H., Ekert Kabalin, A.*

Possibilities of keeping optimal performance of breeding boars during summer period ..... 284  
*Petak, I., Krsnik, B., Milić, D.*

Effectiveness of a new biocide agent in animal production ..... 290  
*Pintarič, Š., Gobec, I., Mirt, D., Dobeic, M.*

## **A3 – IMPACT OF ENVIRONMENT ON POULTRY BEHAVIOUR, HEALTH AND PERFORMANCE**

### **ORAL PRESENTATIONS**

Bioaerosol in laying hen house.....	297
<i>Vučemilo, M., Vinković, B., Matković, K., Brezak, R.</i>	
Controlling the concentrations of airborne pollutants in poultry buildings .....	302
<i>Banhazi, T., Laffrique, M., Seedorf, J.</i>	
Effects of the introduction of lactic acid bacteria in the feed of broilers: from the farm to the processing plant .....	308
<i>Chemaly, M., Postollec, G., Maurice, R., Boscher, E., Houdayer, C., Labbé, A., Hervé, G., Gentilhomme, G., Boilletot, E., Brézillon, C., Quéré, F., Salmon, F., Fravalo, P., Burel, C.</i>	
Influence of lead and cadmium on productivity of laying-hens .....	314
<i>Hallak, A.K., Baykov, B., Kirov, K.</i>	
Apoptosis induced by commercial formulation of chlorpyrifos on avian lymphocytes.....	318
<i>Ravindra, P.V., Tiwari, A.K., Singhal, L., Chauhan, R.S.</i>	
Health and welfare in Swedish game bird rearing .....	321
<i>Wiberg, S., Gunnarsson, S.</i>	
A comparative risk consequences assessment for avian influenza outbreaks occurred in Romania .....	327
<i>Matei, G., Decun, M., Ontanu, Gh.</i>	

### **POSTER PRESENTATIONS**

Bioaccumulation and distribution of lead and cadmium in hen's organism.....	332
<i>Hallak, A.K.</i>	
Effect of delayed chick placement and varied rearing temperatures on broiler chicken productivity .....	337
<i>Muchacka, R., Herbut, E.</i>	
Influence of the light regimen on broiler growth .....	342
<i>Pârvu, M., Dinu, C., Andronie, I.C.</i>	
Study of the thermoregulation capacity of Transylvania naked neck chicks compared to Rhode Island chicks .....	345
<i>Pârvu, M., Dinu, C., Andronie, I.C.</i>	
Response of summer stressed growing rabbits to some dietary growth promoters .....	350
<i>Radwan, N.L., Abdel-Khalek, A.M.</i>	
Effect of restricted access to water on broiler house climate and productivity of broiler chickens .....	359
<i>Skomorucha, I., Herbut, E., Sosnówka-Czajka, E.</i>	

**Tuesday, June 19, 2007**

**PLENARY LECTURES**

Health and welfare in genetically high producing dairy cows and its economical implications ....	367
<i>Oltenacu, P.A.</i>	
New challenges for environmental protection in terms of intensive animal production .....	375
<i>Burton, C.H.</i>	
Environmental stress and reproduction in cows and sheep.....	384
<i>Dobson, H.</i>	
Impact of human-animal interactions on health and productivity of farm animals.....	389
<i>Hemsworth, P.H.</i>	
Precision livestock farming for animal health, welfare and production .....	397
<i>Wathes, C.</i>	

**PARALLEL SESSIONS B1; B2, C; D**

**B1 – ANIMAL HEALTH – ECONOMICAL ASPECTS IN ANIMAL HUSBANDRY**

**ORAL PRESENTATIONS**

Can we decrease the incidence of perinatal mortality in the cow? .....	407
<i>Szenci, O.</i>	
Estimation of economic losses on nematode infestation in goats in Sri Lanka.....	412
<i>Abeyrathne Kothalawala, K.H.M., Fernando, G.K.C.N., Kothalawala, H.</i>	
Modeling the causes of leg disorders in finisher herds.....	417
<i>Birk Jensen, T., Kristensen, A.R., Toft, N.</i>	
Subclinical metabolic disorders in peripartal dairy cows in Hungary in 2005.....	423
<i>Brydl, E., Könyves, L., Jurkovich, V., Mrs. Tegzes, L., Tirián, A.</i>	
Sustainability of future Swedish dairy farming; scenarios for animal health, environment and economy.....	428
<i>Gunnarsson, S., Sonesson, U., Stenberg, M. Kumm, K.-I.</i>	
Evaluation of beta-hydroxy butyrate and glucose in subclinical ketosis in industrial herds of Holstein cows .....	434
<i>Amoughli Tabrizi, B., Safi, S., Asri Rezaee, S., Hassanpour, A., Mousavi, G.</i>	

**POSTER PRESENTATIONS**

Comparative hygiene assessment of technologies for organic manure utilization with high content of dry matter 2. Toxic chemical elements .....	439
<i>Baykov, B., Rangelov, V., Popova, I., Zaharinov, B., Petkov, Y., Hallak, A.K., Kirov, K.</i>	

Assessment of distribution of the lead and cadmium in the rabbit's organism through Klark of distribution (Kd) .....	443
<i>Baykov, B., Hallak, A.K., Kirov, K.</i>	
Prion protein gene (PRP) polymorphisms in scrapie affected indigenous Greek goats ( <i>Capra prisca</i> ).....	448
<i>Fragkiadaki, E., Ekateriniadou, L., Koutsoukou-Chartona, E., Kominakis, A., Rogdakis, E., Xylouri, E.</i>	
The effect of different management systems on the occurrence of diarrhea in calves .....	452
<i>Hassanpour, A., Mousavi, G., Amoughli Tabrizi , B.</i>	
Health of goats and milk quality.....	456
<i>Keidāne, D., Birģeļe, E., Ilgaža, A.</i>	
Research of physical and chemical environmental factors and their influence upon cows kept at cold cow-houses.....	461
<i>Keidāne, I.</i>	
Epidemiology and economics of brucellosis in animals and its zoonotic significance .....	466
<i>Kollannur, J.D., Rathore, R., Chauhan, R.S.</i>	
The prevalence of claw disorders and their effect on milk yield in Hungarian dairy herds.....	469
<i>Lehoczky, J., Jurkovich, V., Olaszy, K., Brydl, E., Könyves, L., Tirián, A.</i>	
Genetic parameters assesement in a Romanian swine population .....	471
<i>Tăpăloagă, D., Mitrănescu, E., Simion, V., Tăpăloagă, P., Furnaris, F.</i>	
Bovine mastitis caused by coagulase-negative <i>Staphylococci</i> may persist.....	476
<i>Taponen, S., Koort, J., Björkroth, J., Saloniemi, H., Pyörälä, S.</i>	

## **B2 – ANIMAL HYGIENE MEASURES FOR THE PROTECTION OF ENVIRONMENT AND PUBLIC**

### **ORAL PRESENTATIONS**

Reducing the concentration of airborne particles in horse stables .....	483
<i>Banhazi, T., Woodward, R.</i>	
A laboratory study of cleanability of surfaces for use in piggeries .....	488
<i>Kymäläinen, H.-R., Määttä, J., Puumala, M., Kaustell, K.O., Mattila, T., Joutsen, B.-L., Kuisma, R., Sjöberg, A.-M.</i>	
Studies on alternative test parameters for virucidal testing of chemical disinfectants according to the guidelines of the German Veterinary Association (DVG) .....	494
<i>Köhler, C., Röder, I., Tryuen, U.</i>	
Comparison of two surface test methods, EN 14349 and OECD, for the evaluation of the bactericidal activity of disinfectants for veterinary purposes .....	495
<i>Kareivaitė, G., Hunsinger, B., Bakutis, B., Böhm, R.</i>	

Specific cleaning and disinfection procedures for *Salmonella* infected pig herds..... 500  
*Bode K., Baier, S., Blaha, T.*

Degradation of doramectin during thermophile phase of composting and manure storage..... 507  
*Gobec, I., Kožuh Eržen, N., Pintarič, Š., Dobeic, M.*

## POSTER PRESENTATIONS

Innovative solution in mastitis prevention through teat dipping..... 515  
*Alasri, R., Goethals, W., Charier, H., Deschuytter, P., Maertens, E.*

Biosecurity and animal health in organic livestock farming..... 520  
*Decun, M., Ontanu, G., Matei, G., Roman, M.*

Microbiological aerosols in poultry houses and its ambience ..... 526  
*Duan, H., Chai, T., Zhang, X., Ma, R.*

Ammonia treatment of hatchery waste for elimination of avian influenza virus..... 533  
*Emmoth, E., Vinnerås, B., Ottoson, J., Albihn, A., Belák, S.*

The utilization of wind-tunnel to estimate the dust content of chosen bedding materials ..... 538  
*Korczyński, M., Głowski, R., Opaliński, S., Czaban, S.*

Soiling and cleaning of floorings in animal houses ..... 543  
*Kymäläinen, H.-R., Määttä, J., Kuisma, R., Nykter, M., Sjöberg, A.-M.*

Comparative hygiene assessment of technologies for organic manure utilization with high content of dry matter 1. Reduction of pathogenic microorganisms in a continuous mesophilic process of anaerobic degradation..... 549  
*Popova, T., Popova, I., Baykov, B., Petkov, Y., Zaharinov, B., Marinova, N.*

Comparative investigation of alternative methods in disinfectant testing according to the DVG-disinfectant testing guidelines (Germany)..... 553  
*Roesler, U., Rockhoff, J., Truyen, U.*

Biofiltration of volatile inorganic compounds in the hatchery ..... 554  
*Tymczyna, L., Chmielowiec-Korzeniowska, A., Bartek, P.*

Investigation of environmental pollution in industrially contaminated area with extensive animal production..... 559  
*Vargová, M., Ondrašovičová, O., Ondrašovič, M., Sasáková, N., Venglovsý, J.*

Biodiversity and concentration of airborne fungi in chicken house ..... 564  
*Wang, Y., Lu, G., Zhang, X., Ma, R., Chai, T.*

The airborne fungi from indoor air of animal houses ..... 571  
*Wang, Y., Lu, G., Chai, T., Song, C., Yao, M.*

Antibiotic resistance of airborne *Escherichia coli* from hen house and rabbitry and their spreading to surroundings..... 578  
*Yao, M., Gao, Y., Chai, T., Cai, Y., Duan, H.*

## C – PRECISION LIVESTOCK FARMING – HEALTH AND WELFARE ASPECTS

### ORAL PRESENTATIONS

Risk assessment challenges in the field of animal welfare .....	587
<i>Candiani D., Ribò O., Afonso A., Aiassa E., Correia S., De Massis F., Pujols J., Serratosa J.</i>	
Playing games for the future: a method for construction and evaluation of scenarios for sustainable animal production .....	592
<i>Gunnarsson, S., Sonesson, U., Nybrant, T., Stern, S., Öborn, I.</i>	
Claw pathologies, dairy cow gait and claw signature .....	598
<i>Nuffel, A.V., Gyselinck, N., Maertens, W., Goolaerts, A., Van Aert, M., Opsomer G., Sonck, B.</i>	
Remote monitoring and analysis of indoor temperature, dairy cows' health and productivity in large loose-housing cowsheds by an automatic network system .....	604
<i>Poikalainen, V., Veermäe, I., Praks, J., Aland, A., Kaart, T., Kokin, E., Pastell, M., Ahokas, J., Hautala, M.</i>	
Interplant information model for pig fattener in food chains .....	610
<i>Schütz, V., Petersen, B.</i>	
Online recognition and localisation of sick pig cough sounds .....	615
<i>Exadaktylos, V., Silva, M., Aerts, J.-M., Taylor, C.J., Ferrari, S., Guarino, M., Berckmans, D.</i>	

### POSTER PRESENTATIONS

A whole farm analysis of goat production systems in North Sinai, Egypt .....	621
<i>Alsheikh, S.M., El-Shaer, H.</i>	
The assessment of animal maintenance in ecological farmholds in Poland in the view of domestic requirements .....	627
<i>Bartkowiak, A., Bartkowiak, P., Dobrzański, Z., Roman, A.</i>	
Characterisation of cough sounds to monitor respiratory infections in pigs .....	633
<i>Ferrari, S., Silva, M., Guarino, M., Berckmans, D.</i>	
A retrospective study of equine colic risk factors in Tabriz area in Iran .....	639
<i>Hassanpour, A., Mousavi, G., Amoughli Tabrizi, B.</i>	
The assessment of cattle's welfare in household units from Rucar – Bran area .....	643
<i>Mitranescu, E., Furnaris, F., Tâpâloâga, D., Simion, V., Togan, C.</i>	
Daily feed intake – a parameter for assessing the pig health status? .....	647
<i>Nathues, H., grosse Beilage, E., grosse Beilage, T., Flerlage, A., Flerlage, H., Wolf, P., Kamphues, J.</i>	
"Bioagro": A portal that aims to the promotion and improvement of organic agriculture in European Union .....	651
<i>Xylouri-Fragkiadaki, E., Hadjigeorgiou, I., Poulopoulou, I., Paparadi, A., Patrikakis, Ch. Z., Sideridis, A.B.</i>	

## **D – FREE COMMUNICATIONS**

### **ORAL PRESENTATIONS**

Foundation of a European College of Small Ruminant Health Management [ECSRHM] .....	659
<i>Fthenakis, G.C.</i>	
A brief history of the spirit of animal hygiene .....	660
<i>Hartung, J., Schäffer, J.</i>	
WELFOOD Virtual Campus for Animal Welfare – Environment – Food Quality and Safety studies.....	664
<i>Szücs, E., Geers, R., Praks, J., Sossidou, E., Jezierski, T., Poikalainen, V.</i>	
"All in – all out" finishing units for dairy beef production .....	669
<i>Tuovinen, V., Saarikivi, M., Hartikainen, K., Kauppinen, R., Herva, T., Manninen, U., Kivinen, T.</i>	
Networked academic societies in collaborative development of E-learning software for vocational training on the domain of farm animal welfare-environment-food quality and safety .....	673
<i>Sossidou, E.N., Szücs, E., Geers, R., Jezierski, T., Praks, J., Poikalainen, V.</i>	

**Wednesday, June 20, 2007**

### **PLENARY LECTURES**

The zoonoses regulations – new approaches to reducing zoonotic pathogens.....	679
<i>Klein, G., Blaha, T.</i>	
Avian influenza – current situation and future trends.....	683
<i>Terregino, C.</i>	
Significance of feed-borne <i>Fusarium</i> mycotoxins on livestock health and reproduction .....	689
<i>Smith, T.K., Diaz-Llano, G., Korosteleva, S.N., Yegani, M.</i>	
Assessment of environmental effects of airborne emissions and waste effluents from livestock production.....	695
<i>Hartung, J.</i>	
Animal welfare at transport and at slaughter of livestock and poultry.....	702
<i>Manteca I Vilanova, F.X.</i>	

## **PARALLEL SESSIONS E1, E2, F, G**

### **E1 – MICROBIAL RISK – OCCURRENCES IN SPECIES AND HUSBANDRY SYSTEMS AND RISKS OF SPREADING**

#### **ORAL PRESENTATIONS**

Dead losses of falcons caused by aspergillosis .....	707
<i>Schulz, J., Sanchez, A., Lierz, M., Hartung, J.</i>	

Identification of airborne fungi from indoor air of chicken houses by RAPD-PCR .....	712
<i>Chai, T., Wang, Y., Lu, G., Song, C., Sun, Y., Qi, C.</i>	
Wood shavings and biocompost as bedding material in horse stables to ensure air quality demands – the agony of choice?.....	722
<i>Seedorf, J., Hartung, J.</i>	
Analysis of faecal samples from Scrapie-infected sheep and BSE-infected cattle for PrP <sup>RES</sup> ....	726
<i>Hunsinger, B., Hilss, K., Böhm, R.</i>	
Salmonella infection level in Danish indoor and outdoor pig production systems measured by antibodies in meat juice and faecal shedding on-farm and at slaughter .....	729
<i>Bonde, M., Sørensen, J.T.</i>	
Bacteriological and virological investigations on the use of quicklime for the disinfection of egg shells and egg scraps.....	735
<i>Philipp, W., Marschang, R.E., Böhm, R.</i>	
Spatial distribution of primary outbreaks of highly pathogenic avian influenza in Nigeria.....	740
<i>Ekong, P.S., Olugasa, B.O., Oyetunde, I.L., Waziri, N.E., Joannis, T.M.</i>	

#### **POSTER PRESENTATIONS**

Use of macrophages in spleen, liver and bone marrow of <i>Trypanosoma congolense</i> (Kaura strain) infected mice for laboratory diagnosis .....	744
<i>Ayoade, R.A.</i>	
Microbiological and environmental hygienic examinations to selected bacterial pathogens in dog droppings.....	752
<i>Egeler, S., Philipp, W., Böhm, R.</i>	
Serological survey of antibodies against <i>Toxoplasma gondii</i> in organic sheep and goat farms in Greece.....	756
<i>Ntatis, V., Xylouri, E., Diakou, A., Sotirakoglou, K., Kritikos, I., Georgakilas, E., Menegatos, I.</i>	
Possibilities of paratyphosis prevention in broilers .....	762
<i>Tibru, I., Orlič, D., Čatană, N.</i>	
<i>Staphylococcus aureus</i> mastitis investigation on herd level on a dairy farm in Hungary .....	765
<i>Tirián, A., Kovács, M., Brydl, E., Szenci, O., Könyves, L., Jurkovich, V., Tegzes, L.</i>	
Salmonella rods prevalence in waterfowl in south-eastern Poland over 2001–2005.....	769
<i>Trawińska, B., Polonis, A., Saba, L., Chmielowiec-Korzeniowska, A.</i>	

#### **E2 – FEED HYGIENE – ANIMAL HEALTH – FOOD SAFETY**

##### **ORAL PRESENTATIONS**

Analyzing preconditions for a transparent meat production system from farm to retail focusing on animal health and food safety.....	775
<i>Breitenbuch, A.V., Meemken, D., Dickhaus, C.-P., Blaha, T.</i>	

Food protein level during sows pregnancy .....	778
<i>Kleisiari, M.</i>	
Antimicrobial resistance in <i>Campylobacter jejuni</i> isolated from broiler chickens in Estonia during periods 2002–2003 and 2005–2006 .....	785
<i>Roasto, M., Juhkam, K., Tamme, T., Praakle, K., Hörmann, A., Hänninen, M.-L.</i>	
Comparative evaluation of different ELISA systems for <i>intra vitam</i> diagnosis of porcine <i>Salmonella</i> infection caused by <i>S. Typhimurium</i> and <i>S. Infantis</i> .....	790
<i>Roesler, U., Matthies, C., Szabo, I., Schürer, K., Nöckler, K., Hensel, A., Truyen, U.</i>	
Efficacy of sequestrant/chelator Amadéite, in the binding of mycotoxins during transit through a dynamic gastrointestinal model (TIM) simulating the GI conditions of pigs. ....	791
<i>Demais, H., Havenaar, R.</i>	
Antibiotic resistance in Swiss veal calves at slaughter .....	793
<i>Di Labio, E., Regula, G., Miserez, R., Ledergerber, U.</i>	
The influence of fish oil supplementation to the feed ration of cows on the level of cholesterol and its fraction in their blood serum.....	798
<i>Korczyński, M., Pogoda-Sewerniak, K., Janeczek, W., Kupczyński, R.</i>	
Influence of fish oil long-term addition on fatty acids content in milk of dairy cows .....	804
<i>Kupczyński, R., Janeczek, W., Szołtysik, M., Pogoda-Sewerniak, K., Korczyński, M.</i>	
Effects of mannan oligosaccharides in the diet of beef cattle in the transition period.....	810
<i>Tassinari, M., Pastò, L.F., Sardi, L., Andrieu, S.</i>	

## POSTER PRESENTATIONS

Cytotoxicity of the mycotoxins in feedstuffs .....	816
<i>Bakutis, B., Baliukoniene, V.</i>	
Bacterial probiotic additive ( <i>Pediococcus acidilactic</i> ) and its impact on broiler chickens health and performance .....	820
<i>Chafai, S., Fatiha, I., Alloui, N.</i>	
The nutritive value of yeast <i>Saccharomyces cerevisiae</i> enriched in copper, iron and manganese.....	826
<i>Dobrzański, Z., Opaliński, S., Dolińska, B., Chojnacka, K., Kołacz, R.</i>	
Features of regulator processes of quantity of synanthropic rodents during implementation of deratizative works.....	832
<i>Dvylyuk, I., Demchuk, M.</i>	
Acute phase protein response in pigs experimentally infected with <i>Haemophilus parasuis</i> .....	838
<i>Fablet, C., Marois, C., Eono, F., Kobisch, M., Madec, F.</i>	
The effect of micro-capsulated yeast supplementation on rumen fermentation in sheep .....	843
<i>Jurkovich, V., Kutasi, J., Fébel, H., Brydl, E., Könyves, L., Tirián, A.</i>	

Udder formation experiment .....	846
<i>Kleisiari, M.</i>	
Influence of halloysite additive in hens feeding on biologically active egg-white components activity .....	850
<i>Kołacz, R., Kulok, M., Opaliński, S., Teresa, S.</i>	
The effect of lactoperoxidase system on enhancing the microbiological quality of goat milk and yoghurt .....	855
<i>Magdoub, M.N.I., El-Gendy, M.H., Kamel, Y.M., El-Nawawy, M.A.</i>	
Water born goitrogens and their role in endemic goiter among lambs and kids .....	863
<i>Mottelib, A.A., Mohamed, A.M.</i>	
Evaluation of drinking water source in dependence on season and groundwater quality.....	868
<i>Ondrašovič, M., Vargová, M., Ondrašovičová, O., Hromada, R., Venglovský, J., Sasáková, N., Laktičová, K., Kudríková, D.</i>	
Effect of a multi-microelement preparation on the production and metabolism of broiler rabbits..	874
<i>Papp, Z., Tegzes, L.</i>	
The cumulation of selected chemical elements of toxic properties in bee honey originating from the industrial and rural-forest areas.....	877
<i>Roman, A., Bartkowiak, A., Reginia, M.</i>	
An epidemic of salmonellosis caused by silage containing <i>Salmonella</i> at a dairy farm.....	882
<i>Ruoho, O.</i>	
Serological differentiation between acute and chronic stages in experimental <i>Toxoplasma</i> infection of normal and immunosupressed rats ( <i>Rattus norvegicus</i> ) .....	885
<i>Silva, R.C., Da Silva, A.V., Langoni, H.</i>	
The incidence of heavy metals in the one pond area around of Bucharest and in fishes that populated these waters .....	890
<i>Simion, V.-E., Mitrănescu, E., Pădure, A., Tăpăloagă, D.</i>	

## F – EMISSIONS AND WASTES IN ANIMAL HUSBANDRY – RISKS FOR ANIMAL AND HUMAN HEALTH

### ORAL PRESENTATIONS

Strategies for hygienic safe recycling of organic wastes and residuals to agriculture .....	899
<i>Böhm, R.</i>	
Faecal microorganisms in runoff from cattle and horse farms – quantification and mitigation.....	909
<i>Uusi-Kämppä, J., Hyvärinen, M., Kuisma, M., Nykänen, A., Jansson, H., Jansson, H., Närvenen, A,</i>	
Seasonal changes of zoonotic agents presence in dairy manure of modern and traditional farms .....	915
<i>Santorum, P., García, R., Fernández, B.</i>	

Comparison of aerobic and anaerobic ways of treatment of pig slurry solids .....	921
<i>Venglovský, J., Sasáková, N., Vargová, M., Ondrašovičová, O., Ondrašovič, M., Martinez, J.</i>	
Effect of anaerobic storage and aerobic digestion on micro-organisms in pig manure: cultural and molecular approaches.....	926
<i>Pourcher, A.-M., Marti, R., Thorigné, A., Jégou, B., Dabert, P.</i>	
Determination of antibiotic residues in leachate of conventional and organic dairy farms .....	932
<i>Kemper, N., Färber, H., Skutlarek, D., Krieter, J.</i>	
Greenhouse gas emissions from poultry and pig production in Slovenia .....	937
<i>Dobeic, M., Pintarič Š., Gobec I., Barlovič N.</i>	
Odours identification in the laying hen's experimental room and the use of aluminosilicates to deodorization.....	942
<i>Opaliński, S., Dobrzański, Z.</i>	
Air quality in cow houses with curtain wall ventilation in Finnish climate .....	947
<i>Kivinen, T., Mattila, K.M., Teye, F., Heikkinen, J., Heimonen, I.</i>	

#### **POSTER PRESENTATIONS**

The efficiency of a slaughterhouse wastewaters treatment plant and their pollutant potential ....	952
<i>Borda, C.</i>	
The occurrence of potentially pathogenic bacteria in atmospheric air in the vicinity of a sewage treatment plant .....	957
<i>Breza-Boruta, B., Paluszak, Z.</i>	
Biological pollutants of air in poultry hatchery hall .....	962
<i>Chmielowiec-Korzeniowska, A., Tymczyna, L., Drabik, A.</i>	
Validation of meat by-products composting process on the basis of the inactivation of selected microorganisms and parasite eggs.....	966
<i>Ligocka, A., Paluszak, Z.</i>	
Air pollution with sulfur compounds in rabbit house and fox farm.....	974
<i>Nowakowicz-Dębek, B., Saba, L., Wnuk, W., Martyna, J., Chmielowiec-Korzeniowska, A.</i>	
The effect of composting of poultry excrements on the survival of model helminth eggs .....	978
<i>Papajová, I., Juriš, P., Szabová, E., Sasáková, N., Venglovský, J., Šefčíková, H., Vargová, M.</i>	
Bacteriological and parasitological risks associated with agricultural wastewaters and sewage subjected to biological treatment.....	985
<i>Sasáková, N., Juriš, P., Papajová, I., Vargová, M., Venglovský, J., Ondrašovičová, O., Ondrašovič, M.</i>	
Elimination of <i>Ascaris suum</i> eggs during composting of organic waste in the Kneer container technology .....	990
<i>Szala, B., Paluszak, Z.</i>	

Noise in the animal housing environment.....	995
<i>Venglovský, J., Sasáková, N., Vargová, M., Ondrašovičová, O., Onrašovičová, S., Hromada, R., Vučemilo, M., Tofant, A.</i>	

## **G – ANIMAL TRANSPORT, EUTHANASIA AND SLAUGHTER – CAN GOOD WELFARE BE PROVIDED?**

### **ORAL PRESENTATIONS**

Measurement of thermal stress in slaughter cattle during long road transport .....	1003
<i>Hartung, J., Marahrens, M., Brüser-Pieper, C.</i>	

Modes of transport and transport lorries upon long transports of horses, cattle, calves, adult and young ostrich .....	1008
<i>Štefančič, I., Dobeic, M.</i>	

Blood critical values' profile of American barrows vs. boars arriving to México after 27 hours of transportation .....	1015
<i>Becerril-Herrera, M., Jaramillo, P., Rodríguez, R., Alonso-Spilsbury, M., Lemus, C., Guerrero-Legarreta, I., Olmos, S.A., Ramírez-Necochea, R., Mota-Rojas, D.</i>	

Logistics at transport to slaughter. Food and environment – optimised animal transport .....	1017
<i>Wiberg, S., Algers, A., Algers, B., Franzén, U., Lindencrona, M., Moen, O., Ohnell, S., Waidringer, J.</i>	

The development of a stun quality audit for cattle and pigs at slaughter .....	1023
<i>Atkinson, S., Algers, B.</i>	

Stun quality in relation to cattle size, gun type and brain haemorrhages.....	1028
<i>Algers, B., Atkinson, S.</i>	

CO <sub>2</sub> – stunning of turkeys in a V-shaped tunnel .....	1032
<i>Hänsch, F., Nowak, B., Hartung, J.</i>	

Can CO <sub>2</sub> stunning meet welfare of slaughter pigs? .....	1038
<i>Nowak, B., von Mueffling, T., Hartung, J.</i>	

Route planning reduces the costs of animal transportation: animal welfare versus economics .	1044
<i>Håkansson, N., Henningsson, M., Rönnqvist, M., Wennergren, U.</i>	

### **POSTER PRESENTATIONS**

Blood gases, metabolic profile and dehydration of female and barrow pigs transported for a period of 7.5 hours in México .....	1049
<i>Becerril-Herrera, M., Alonso-Spilsbury, M., Lemus-Flores, C., Guerrero-Legarreta, I., Olmos-Hernández, A., Ramírez-Necochea, R., Mota-Rojas, D.</i>	

Emergency killing of poultry during disease outbreaks in the Nordic countries .....	1053
<i>Berg, C.</i>	

Induced response of some welfare indicators in slaughtered sheep .....	1060
<i>Pârvu, M., Andronie, I., Andronie V., Dinu, C.</i>	

## MAIN SPONSORS ISAH-2007

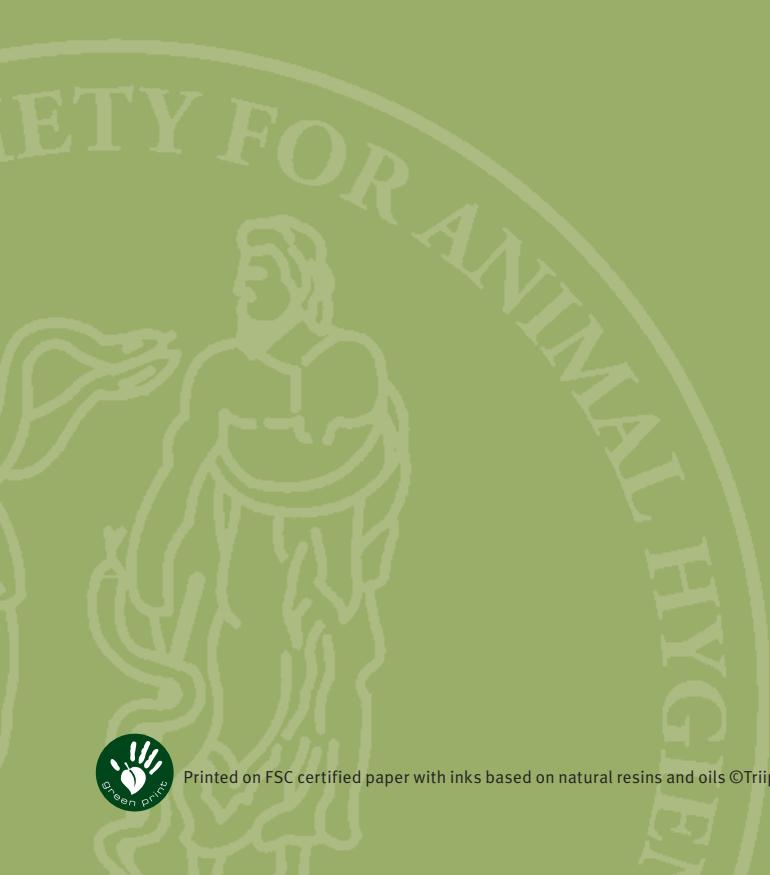


## MAJOR SPONSORS ISAH-2007



## SPONSORS ISAH-2007





Printed on FSC certified paper with inks based on natural resins and oils ©Triip

ISBN 9949-426-30-8

A standard linear barcode representing the ISBN number 9949-426-30-8.

9 789949 426300