



**Good Agricultural Practices in the
Indian Layer Industry;
Opportunities and Challenges for
Egg Powder Export**

20th and 21st January 2010

Hotel Sun and Sand
262, Bund Garden Road
Pune 411001
India



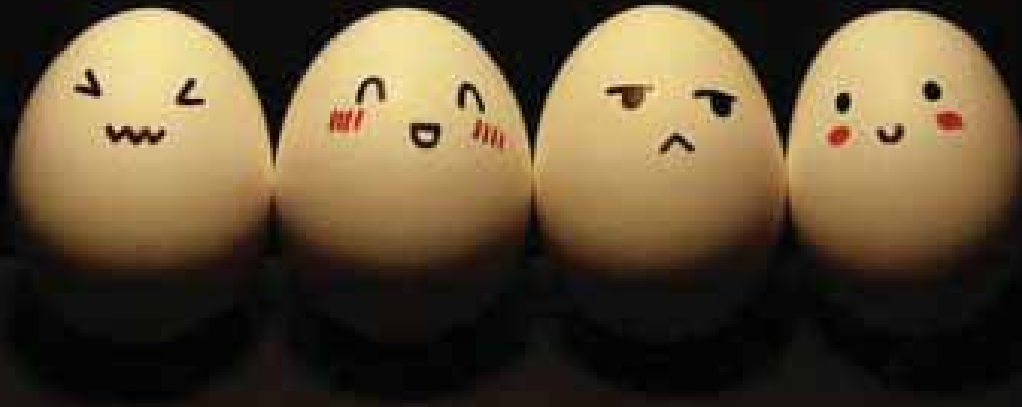
PO Box 65
8200 AB Lelystad
The Netherlands



Shop F, Lantana Gardens
NDA Road, Bhavdhan
Pune 411 021, India



19, 1 Main, 1st Cross Aswath
Nagar, RMV, II Stage,
Bengaluru 94, Indai



Compiled by

Dr. Nitya S. Ghotge and Dr. Gayatri R. Rajurkar

Anthra

Shop F, Lantana Gardens,
NDA Road, Bavdhan,
Pune 411 021
www.anthra.org

Editorial Support

Dr. Nita Mukherjee
Mukherjee Knowledgeware Association
Mumbai

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Design and Print

Mudra
383 Narayan Peth,
Pune 411 030
mudraoffset@gmail.com

Acknowledgments

We are grateful to the Dutch Ministry of Agriculture for financial support and to all the participants, who attended the seminar, for their contributions. Special thanks to the participants who gave valuable presentations during the seminar.

About the Workshop

This workshop was jointly organized by Wageningen UR Livestock Research (Netherlands), ANTHRA (Pune, India) and Vrutti (Bengaluru, India) to understand product quality control mechanisms and safe production practices in the Indian poultry industry, with special reference to egg powder production and export. This workshop made an attempt to bring key people from the poultry sector together to share their experiences.

About 35 people participated in the seminar. This workshop can be considered as an important step in the discussion on attention for animal welfare issues in the Indian animal production sector.

The seminar was held in Pune on the 20th and 21st of January 2010 at Hotel Sun and Sand, 262, Bund Garden Road, Pune 411001.

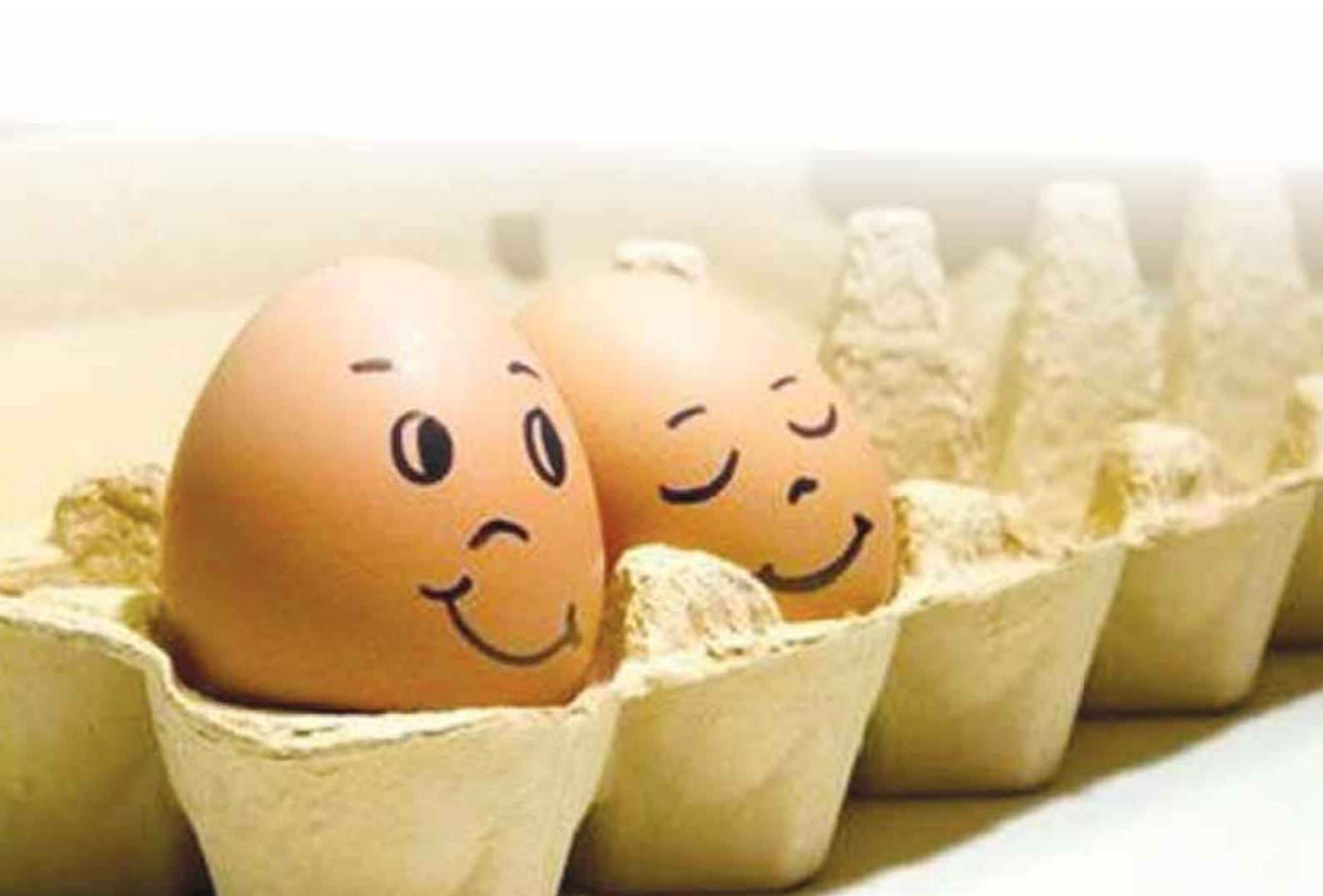




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The Organisers



ANTHRA is an organisation of women veterinary scientists working primarily on issues of livestock development in the wider context of sustainable natural resource use. It is a non-profit organisation registered under the Societies Registration and Public Trust Act of Bombay, 1860.

ANTHRA's focus areas are:

- Livestock Health
- Livestock and People's Livelihoods
- Livestock and Agriculture
- Livestock and the Environment.

Anthra's work deals with livestock production and farming systems, crops and fodder varieties, livestock and plant genetic resources, medicinal plants and healthcare traditions, land & water use and the protection of indigenous knowledge related to these.

Address

Anthra
Pune Office
F, Lantana Gardens
NDA Road, Bavdhan
Pune 411 021
Maharashtra, India
Email: anthra.pune@gmail.com
Website: www.anthra.org



Vrutti is a livelihoods resource centre that works on the social and managerial aspects of the livelihoods sector. It is a centre of excellence contributing to livelihoods promotion and improving the quality of life of disadvantaged groups.

Vrutti is part of the Catalyst Group. Over the past 13+ years, Catalyst Management Services has gained experience and expertise in livelihoods promotion. Building on that experience, and on the needs of the sector, Vrutti's operations are a bridge between development and technology, policy & practice, and research & action. The focus of its operations is on social value addition.

Address

Vrutti
#19, 1st Main Road
1st Cross, Ashwathnagar
RMV 2nd Stage
Bengaluru 560 094
Karnataka, India
www.vrutti.org



Wageningen UR Livestock Research performs applied and practice-oriented research in the areas of livestock and livestock systems. Our institute develops knowledge for a sustainable and profitable livestock sector, converts this knowledge into practice-oriented solutions and innovations, and ensures that this knowledge is disseminated. We integrate scientific knowledge from various disciplines – together with clients and stakeholders from practice – to develop livestock concepts for the 21st century.

Wageningen UR Livestock Research tackles themes that are topics of discussion in society or are expected to be so in the future. We encourage discussion by conducting research projects that are clearly linked to our surroundings. We conduct high quality research with societal impact - Science for Impact. At the international, national and regional levels, Wageningen UR Livestock Research actively initiates, facilitates and participates in networks focusing on innovation, research, expertise and experience.

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Address

Wageningen UR Livestock Research
P.O. Box 65
8200 AB Lelystad, The Netherlands
tel: +31 320 238 238
fax: +31 320 238 050
info.livestockresearch@wur.nl

The Setting

Introduction

India is the third largest producer of eggs in the world and has a vibrant indigenous industry compared to other developing countries. Although a large producer of eggs, there is seasonal fluctuation in the production and consumption of eggs in India, partly due to religious beliefs. Conversion of surplus eggs into egg powder is an opportunity for the sector to profitably utilise the surplus. India enjoys a competitive advantage due to the low cost of production compared with other countries. Europe is a large importer of egg powder from this country. However, the European Union (EU) has high standards of production; it is important that the Indian producer is aware of these standards and is able to make it to the levels desired for export.

This workshop was aimed to bring together different stakeholders to jointly explore the challenges in egg powder production as well as collectively work towards finding ways to overcome them. The workshop was divided into three sessions; in each session an attempt was made to get four different perspectives, namely, of the EU, of the poultry industry, of the Indian government, and of veterinary research institutions, universities or NGOs.

The three sessions covering different aspects of egg powder production were:

- Food Safety and Egg Powder
- Animal Welfare and Egg Powder Trade
- Egg Powder Trade

A fourth and final session was used to look at ways forward.

Session I - Food Safety and Egg Powder

Rationale

Food production has changed globally; industrial modes of production have become the order of the day to cater to new and emerging markets. Modern lifestyles, with supermarkets catering to consumer convenience, are increasingly dictating food production, processing and trade. Longer shelf life and new modes of packaging have become a necessity. Increased global trade also results in several emerging threats in food and hygiene.

Industrial modes of agriculture and livestock production rely heavily on chemicals, antibiotics, hormones and pesticides, which then may find their way into the food chain and thence to humans. There is growing concern among consumers in developed countries about the presence of these residues in food products; they are demanding higher food safety standards. Foods exported to the European Union are often rejected because they do not meet the standards set by the EU. For producers from developing countries to be able to export, an understanding of the standards acceptable in Europe is essential.

It is becoming increasingly difficult to operationalise those standards in India, because of their multiplicity. Being a tropical country, there is a high risk of infection and farmers often use antibiotics prophylactically to prevent infection in animals. However many of these today are banned in the EU. If products from India test positive for the presence of these antibiotics they risk the danger of being rejected. India as yet does not have a proper policy in place for the use and withdrawal of antibiotics in farms animals.

Likewise banned pesticides continue to be in use in India and the agricultural practices being supported by the government often encourage the use of chemicals. Getting chemical free feed then becomes a problem which is what many poultry farmers face today.

Food Safety and EU Acceptable Standards

Peter Van Horne

Wageningen UR LEI
The Netherlands

Abstract

With the increased importance of the EU in export trade, more research is needed to understand EU standards. India has the lowest production cost for eggs, so there is high potential to become a worldwide exporter. The EU is a conglomeration of 27 countries and there are several regulations in Europe on animal welfare, environment and food safety. This has an impact on the production costs. Europe also has high import taxes, to protect the European market. The main flow of egg powder into the EU is from the USA, Argentina and India.

Within the EU, different countries have different standards; the highest are set by Scandinavia, followed by countries in Western Europe. Sweden, for example, has a separate legislation on salmonella. Many countries also have private regulations. The Netherlands exports within the EU, especially to Germany. It has, therefore, adopted German standards.

The Netherlands has non-integrated farms. Every egg on the farm is coded to ensure traceability for presence of non-permissible residues. Salmonella is still a major problem and poultry farmers vaccinate their birds. Eggs produced soon after medication are destroyed.

Europe does not permit growth of Genetically Modified Organisms in Europe, but as yet is not opposed to Argentina, India or the US exporting egg powder from birds feeding on GM feed produced in those countries.

According to EU regulations it is mandatory to enriched cage systems by 2012. Although there will be a shift to enriched cages as well as barn systems, it is more difficult to manage the health of birds as well as workers who work in close proximity with these animals. Animal welfare standards maintained by poultry farms, however, will influence the marketability of eggs and egg products.



Critical Concerns in Managing and Maintaining Food Safety Standards under Indian Conditions, Particularly for Egg and Egg Products for Export

Dr A M Paturkar

Professor and Head
Department of Veterinary Public Health
Bombay Veterinary College
Mumbai

Abstract

The increasing global demand for egg and egg products and health concerns regarding their safety among consumers has made global trade highly competitive. Thus, strict vigilance in managing and maintaining food safety standards at the national and international level is essential to ensure international acceptance of Indian products. There are only a few egg processing plants in India. There is a need to increase their number and processing capacity to handle a large quantity of eggs with state-of-the-art facilities. These plants should be established with public-private partnership and implement the internationally accepted quality management systems like ISO: 22000 and Hazard Analysis Critical Control Point (HACCP). They should be certified by regulatory authorities. Establishing the forward and backward traceability chain -- from egg processing plant to consumers -- will help to build consumer confidence. Ultimately, these actions will help to meet the international food safety standards and promote the export of egg and egg products from India to developed countries.



Good Agricultural Practices in the Indian Layer Industry; Opportunities and Challenges for Egg Powder Export

KG Anand

Venkateshwara Hatcheries Limited, Pune

Abstract

Poultry-rearing is the most dynamic and fast-growing agri-business activity in India. Indian poultry industry provides direct and indirect employment to over 4 million people, particularly in rural areas, and contributes about Rs.40,000 Crore to the national GDP. Layers in India have registered an annual compounded growth rate of 7-8% for the past three decades, India occupies 3rd place in world egg production and the per capita availability of eggs in India has now increased to 53 eggs/year.

The Indian egg processing industry came into existence about 20 years back to take advantage of the export potential of egg products. Currently, although four plants have shut down due to continuous losses, there are three egg powder plants functioning in India, with a total investment of about Rs.100 Crore and having a production capacity of 10,000 mts egg powder/ annum, with a potential to earn foreign currency to the tune of Rs.200 Crore a year.

Although due to recession, egg powder exports currently are subdued, the outlook for increased export of egg products is buoyant. At present, Indian egg industry is exporting egg powder to the EU countries, Middle East, Japan and countries of the Far East. Out of total exports, 60% have gone to the EU, 20% to Japan, 10% to Middle East and Far East and the balance to other countries.

The Indian egg processing industry has come out of the cyclical ups and downs and is fully geared to tap the potential of the world market. The industry, in consultation with buyers like the EU and statutory Indian agencies like the EIA has developed the necessary expertise for self-monitoring to overcome the issues of unacceptable residues in egg products.

India has a competitive advantage of producing eggs at a low cost and is geographically ideally located to cater to the world market. Therefore, it should witness a quantum jump in exports of egg powder and growth in volumes.

Good Agricultural Practices Including Animal Welfare to Meet Export Standards

Dr AT Venugopalan

Director (retired) TANUVAS
Chennai 600 051

Abstract

Food safety and animal welfare is of global significance. The highest food safety and animal welfare norms are implemented by the EU. The EU has prescribed a separate regulation for import of poultry and poultry products. It is imperative for developing countries like India to update the animal production and processing systems in such a way as to meet the importing countries' requirements. The growth and further development of poultry in India entirely depends on meeting food safety and animal welfare requirements as prescribed by importing countries. Good agricultural practices will result in higher value realisation, better food safety results, and improved animal health.

International trade is governed by WTO/SPS (World Trade Organization / Sanitary and Phyto-sanitary) agreements. The OIE (The World Organization of Animal Health) is the authority as far as animal health is concerned. The OIE issues an Animal Health Code annually. As per the WTO/SPS agreements, a country can insist on norms higher than the international subject to the following:

- a Higher norms prescribed have a scientific basis;
- b Higher norms are being implemented by the importing country;
- c Higher norms are not a trade barrier.

Import of poultry and poultry products in the EU are governed by EU regulation R-798/2008 and its amendments R-411/2009. These regulations cover all import requirements of poultry/poultry products which include:

Diseases - The important poultry diseases of concern in trade are Avian Influenza, Salmonellosis and New Castle Disease. Good agricultural practices for safe production of foods of animal origin include: Proper premises/housing, good sanitation practices, management of health records, proper use of antibiotics/biological agents and pesticides, quality feed and water, proper animal waste management, quality assurance program and third-party certification. Microbiological criteria of egg products are prescribed in the EU regulation 2073 of 2005.

Animal Welfare - Poultry welfare is of more of a legislative concern in the EU than in other countries. The WTO has not explicitly recognised animal welfare as a legitimate

concern. The animal welfare requirements of the EU are likely to increase the cost of production of eggs and meat with 60% in free range and 120% for organic farming.

Bio Security - This includes safe water, feed and environment. As yet there is no legal basis for implementing food safety/animal welfare programmes. It is imperative to provide legal basis for implementation for the growth and further development of poultry industry in India which entirely depends on export of eggs and meat. To meet these requirements, it is essential to follow and implement food safety and animal welfare norms as prescribed by the importing country



Session II - Animal Welfare and Egg Powder Trade

Rationale

Animal welfare is perceived very differently in different societies, as it is greatly influenced by philosophies, religion and ethics prevalent in a particular society. Much of this also tends to influence the way we perceive domestic animals, the way we look at animals, domestication of animals as well as how we keep them. So what is appropriate from the point of view of one society may be completely different from another society's point of view.

Industrial systems of production are new all over the world and have emerged only in the past 30-40 years. All societies are grappling with issues related to industrial modes of production. Consumers in developed countries are increasingly concerned about how the animals they consume are raised. Exactly as human welfare became a matter of concern in newly industrialised societies in Europe about 200 or 300 years back, animal welfare issues are becoming a point of concern when we shift towards industrial livestock production. Modern technology and new methods of keeping, treating and slaughtering animals are in direct conflict with older beliefs and traditions. Specifically, in poultry rearing, issues of space, veterinary care, and transport are key areas of concern.

Animal Welfare Concerns in the EU

Peter Van Horne

Wageningen UR LEI
The Netherlands

Abstract

While the cage system is the most efficient housing system for layers, consumers of eggs in developed countries do not like to know that the egg they are consuming comes from a caged bird. Different countries have different cage sizes in which laying birds are housed. The cage size is 350 cm² per bird for countries like Argentina and Brazil. In Europe, the cage size started with 450 cm² per bird, went up to 550 cm² and by January 2012, it will move to 750 cm². The main idea behind the enriched cage is its arrangement for the laying nest, litter and perch; also the increase in height.

Within Europe, Switzerland banned cages over 10 years ago. Sweden, Austria and Germany have more recently banned cages. Scandinavia has banned beak trimming as well. As The Netherlands exports to Germany, it too has banned cages. In the Netherlands, farm traceability also tracks animal welfare standards on individual farms, which consumers can check when they purchase eggs. While the US generally is considerably behind the EU in welfare standards, some states like California are progressing towards no cages. Brazil and Argentina, although major exporters of poultry, have no legislation on animal welfare. Although Japan is a wealthy country, it does not have high animal welfare standards.

Ensuring animal welfare standards increases production costs. As yet, there is no trade barrier on animal welfare imports to the EU, but in the future this could be imposed, with emphasis on density, space allowance, enrichment, and beak trimming.

Animal Welfare Concerns in the Poultry Sector

Dr Sheila Rao

President
CUPA, Indira Nagar
Bengaluru 560 038

Abstract

Housing, transport and other management and welfare standards are extremely low in most of Indian poultry farming. Raising issues of animal welfare publicly ensures that there would be exchange of information, technical assistance, specific pilot projects and other platforms for learning and sharing. Importantly, it would reveal farming conditions in the country which hitherto the public is unaware of. While animal welfare has been a part of international trade talks, it has been constantly blocked by the Indian trade delegation.

Most of the five freedoms essential to animal welfare are violated in poultry farming, whether in battery cages for layers or in deep litter system for broilers. They are violated by overcrowding, confinement in small cages, forced molting, during transportation and, finally, during slaughter. India has some of the best animal protection laws but the lacuna is in their enforcement.

Intensive and industrial farming systems also use excessive resources in terms of water, thus contributing to the depletion of water resources. Water use by this sector exceeds 8% of global human water use. The sector is also resource intensive in terms of growing special feed for the animals.

Very soon, in Europe, and even in some states in the USA, battery cages will be banned. It will be interesting to see if industry in India would take a step forward to do something similar. Animal welfare is as much about humans as it is about animals, and animal welfare is not against profit. The Indian consumer is now becoming increasingly aware about quality, as incomes are increasing and people would not mind paying extra for value addition.

Animal Welfare Concerns in Industrialised Poultry Systems

NG Jayasinha

Animal Welfare Board of India,
Shree Ganesh Residency, Vadgaon Sheri
Pune 14
Maharashtra

Abstract

A critical relationship exists between animal health and animal welfare. The use of animal carries with it ethical responsibilities to ensure that such animals are treated with the greatest care. Most people around the world, and maybe some people in India too, do believe that battery cages in the reproduction systems are cruel. There are certain scientific evidences against battery cages and the EU has taken a stand that by 2012 traditional battery cages should be phased out.

The rich urban rich who constitute 25% of our population consume 75% of the eggs produced in India. They can make an informed choice about the production system under which the products they eat are produced.

There are already waves of changes in other countries. In the USA for example, California and Michigan have passed legislation to phase out battery cages. In UK, MacDonald's only uses cage-free eggs - 90% of MacDonald's is now cage-free. Many American food chains are using cage-free eggs as well. With the Indian food industry opening up, more and more consumers will demand higher services and standards from industry. Many corporations may also prefer cage-free eggs.

Animal welfare is not an impediment to business today. It is an opportunity that is opening up, where the margins are high. The food industry in India wants to change. Animal Welfare has added brand value for them; it has added corporate social responsibility; it has added PR exercise for a majority of these people.

The EU gave most of the industries 13 years to change. In India, even if we assume that these changes will become imperative 15 years from now, it is better that we start preparing ourselves for change now, rather than saying: "hey we aren't ready for risk."

Animal welfare issues to meet export standards

D Kannan and G Selvaraju

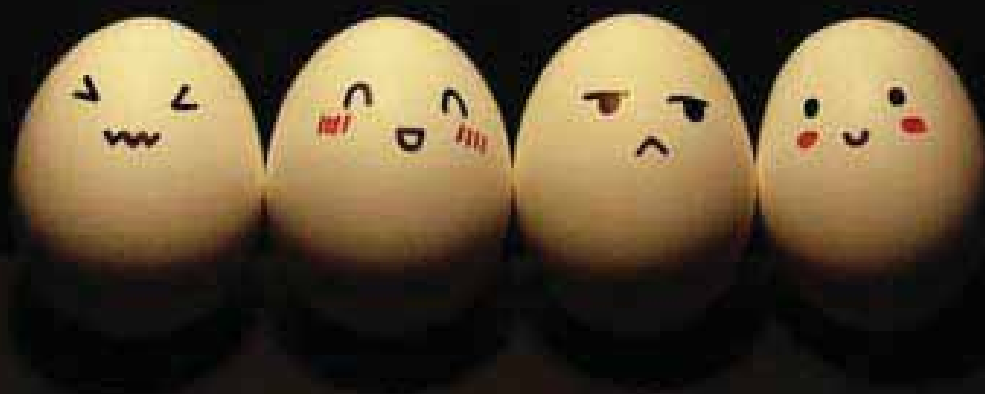
Assistant Professor,
Veterinary College and Research Institute, Namakkal
Tamil Nadu Veterinary and Animal Sciences University
Tamil Nadu

Abstract

The poultry industry in India has made unprecedented growth during the past three decades. It has transformed itself from the age-old backyard farming into a dynamic agro-industry. Its development has not only been in size but also in productivity, sophistication and quality. More than 80% of the export of poultry products from India originates from Tamil Nadu. During 2009, 110 million table and 50-80 million hatching eggs were exported from India. Besides, approximately three million powdered eggs per day are also exported. Export of poultry meat from India is not significant as yet.

Successful export of poultry products depends on many factors including hen welfare (which includes bird health), production costs, food safety, occupational health & safety, and environmental issues.

Food safety is based on identifying and monitoring the most critical points in the production system rather than relying on the testing of the final product. Healthy poultry products to meet export standards can be achieved by pre-harvest (on-farm) and post-harvest (off-farm) approaches.



Session III - Egg Powder Trade

Rationale

Trade in egg powder offers an interesting opportunities for India, as the Indian poultry sector has the advantage of low production costs and a vibrant poultry industry. Moreover, due to various legislations in Europe, especially those devoted to animal welfare, cost of production within Europe is likely to escalate enormously in the coming years. To grab the opportunity, Indian producers have to meet the standards specified by the EU. For this, constraints within the country and the emerging threats for trade have to be clearly understood by Indian industry.

Trade Opportunities of Animal Products from India to the European Union, with Special Reference to Egg Powder

Peter Van Horne

Wageningen UR LEI
The Netherlands

Abstract

Global patterns in egg production are changing rapidly. India's own share of egg production in the world has increased considerably since 1970. China now produces 37% of the world's eggs and India is the third largest producer. The Netherlands is a big exporter of eggs with most of its exports going to Germany. It imports eggs as well. Malaysia is also a large exporter, mainly to Singapore. India exports to the Emirates and also a small amount to other countries. There also is a lot of trade within Europe. The main suppliers of eggs to the EU are Argentina, the US and India. Japan also imports egg powder from India. The Japanese have very strict regulations, so suppliers to Japan have to be very particular. Europe has a lot of regulations on food safety, environmental safety, and animal welfare, and there is a lot of protection through import tariffs. Thus trade with Europe is not easy.

On the other hand, several factors are affecting egg production in Europe. One is the high cost of feed, as the demand for ethanol has hiked the price of maize. Housing, especially the push towards enriched systems by 2012, means the unit cost of production will increase significantly. Here, India has an advantage because of lower costs and low cost of housing.

However, trade negotiations are in the hands of the trade negotiators, including governments and politicians, and the poultry sector itself will have to comply with the standards set at these negotiations.



Certification & Monitoring Protocols for Egg Powder Trade - Guidelines for Industry

Dr Amit Sharma

Assistant Director, Export Inspection Agency,
Aman Chambers, Maharshi Karve Road
Mumbai 400 004

Abstract

To meet international standards, testing must be done during the process and not merely when the product is ready. This is to enable tracing the origin of problems. India is beginning to initiate processes of testing being followed in countries we are exporting to. There are many difficulties in this, as different methods and laboratory procedures are used in different countries and often it is not possible to determine why a particular consignment sent for export was rejected, as testing methods are not always disclosed by countries we export to. Different countries also have different permissible levels. Australia is worried about their bio-security. Japan has extremely strict rules about pesticide residues, especially in poultry and eggs. The EU has a general food law, made in 2002, which governs all imports as well as a residual control programme. Foods exported to the EU have to comply with these standards.

The Export and Quality Control Inspection Act 1963 of India governs the exports from the country. Under this act the Export Inspection Council (EIC) of India was set up to provide guidelines to different agencies as well as to inspect different commodities. Currently more than 1,000 commodities are being covered. Some of the commodities come under the mandatory inspection council. Egg powder is one such commodity. Through a notification in 1977, the limits of antibiotics, organo-chlorine and pesticides were set, based on the requirements of different countries.

There are certain main procedures for the approval of an establishment. These include the adherence to the HACCP manual, water test report, location and layout plans, flows, identified farms, approval of trained technologist etc. There usually is a 3-tier surveillance system, which includes monitoring by EIA officials, supervisory visits, and corporate audits. Hygiene provisions are also to be followed, primarily against the entry of rodents and insects.

With regard to the treatment of birds, the use of antibiotic products, the date of administering, and the withdrawal period are very important. In India, till date the drug controller has not been able to mention the withdrawal period for specific veterinary medicines. As a period of withdrawal is critical for export, in August last year a default withdrawal period of 28 days for poultry meats as well as egg products has been given for all medicines.

Constraints Faced by Poultry Farmers in Egg Powder Export

Satish Babu

Ashraya Poultry Farms
Mysore, Karnataka

Abstract

Countries that India exports to are becoming very particular about standards. Antibiotics are banned in many countries, but not yet in India. Gulf countries are very particular and do not accept eggs during bird flu outbreaks, unless they have been declared bird flu free. If an export consignment is rejected because of a disease like bird flu, or if an egg powder processor does not buy eggs from supplier farms, these surplus eggs enter the Indian market and prices drop as the market is flooded.

As the cost of inputs, like feed and electricity, are very high, farmers are finding it difficult to manage their businesses efficiently. Therefore, they are requesting a minimum support price so that the farms will not close during a crisis. The cage sizes in India are on par with US standards.





Session IV - The Way Forward

The major issues of concern which emerged from the workshop were:

- Continued use of antibiotics in the poultry sector for non-therapeutic purposes and the fact that India has no policy on withdrawal period for antibiotic treated products before releasing them in the market;
- Issues of animal welfare and the fact that, at present, the eggs used for egg powder are produced under the caged system; and
- High feed costs and the presence of pesticides in the feed.

The group was asked to provide suggestions to address these issues. Among the major recommendations listed by the group were:

General recommendations

Use of Antibiotics

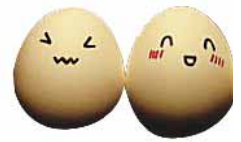
- Use of ethno-veterinary drugs, pro-biotics and Ayurvedic medicines;
- Increased surveillance and testing, especially for diseases like Avian Flu and bacterial infection from salmonella, as well as vaccines for these;
- Vaccines to be developed as per EU norms especially for exporting poultry units.

Animal Welfare

- Over time, it will be possible to implement animal welfare measures, provided such products get a premium price.
- Many actions promoting animal welfare exist that are good for business and can be carried out in a cost-effectiveness way.

Feed

- On the issue of high feed prices and the presence of pesticides in the feed, the participants felt that government intervention was required, especially to ban pesticides that have already been banned in other countries;
- It was also recommended that the government should play an active role in the education of maize-growers on post-harvest and storage techniques. Farmers would also need to be made aware of the problems that would arise if they use banned pesticides.



The group came up with recommendations for enhancing good agricultural practices for food safety and animal welfare: These recommendations were directed to the industry, the government, universities & research institutes, poultry farmers, NGOs as well as to the European Union:

Recommendations for the Industry

- Adopt bio-security norms;
- Include animal welfare as a guiding principle for trade, extend expertise to poultry farmers and support them in the implementation of such measures;
- For export items, follow the most stringent EU standards for food safety and animal welfare;
- Industry should take a lead in animal welfare and lead by demonstration to small farmers;
- Implement and maintain high standards for export as well as for the domestic market;
- Industry must evolve and document best practices for animal handling and other welfare measures; Inspection and audit of these should be driven by the industry and punitive action to be taken against those who do not comply;
- Large industry-players should have an animal welfare ethics committee which has representation from industry, the Veterinary Council of India, civil society and animal welfare groups; The ethics committee could develop and guide the sector on the key elements of animal welfare;
- Industry could make a phased, market-demand-based transition to more humane practices; certification of products as 'humane certified' could be brought in through third-party auditors.

Recommendations for Universities & Research Institutions

- To take up research on existing field problems and develop appropriate solutions that are also profitable; The findings should be disseminated widely. Students at the Master's level can take up some of these issues for study;
- Encourage research on appropriate and applicable traditional knowledge (herbal medicines) which can then be disseminated to farmers;
- Develop new high-yielding varieties of poultry feed ingredients, especially maize;
- Develop farm-level diagnostic kits at affordable prices;
- Review farm designs / husbandry systems; consider whether non-cage systems should be introduced to adjust to changing demands and enhance India's advantages;
- Universities and national institutes should be provided with a 'project bank' for development of modern poultry products;

- Piloting projects at different locations to demonstrate the technical and financial viability of implementing GAP (Good Agricultural Practices) and Animal welfare measures;
- Extend expertise to industry as well as small farmers;
- Provide continued education and training of farmers and college teachers;
- Animal welfare should become part of the veterinary education curriculum and veterinary students should regard animal welfare as an integral part of animal husbandry;
- The focus of veterinary education should not just be to increase production; institutions should take up research on the stress caused by intensive farming;
- Run courses on animal welfare and good agricultural practices for farmers;
- Develop a strong interface between the industry and universities, like in Tamil Nadu.

Recommendation for the Government

- Establishment of multiple labs for testing and diagnosis of critical poultry diseases;
- Provision of cold storage facilities for eggs used for conversion to egg powder;
- Establish strict controls, monitoring protocols and certification procedures for farms and industries in a streamlined manner;
- Provide incentives and subsidies to enhance Good Agricultural Practices;
- Reduce import duty on yeast, DDGS (distillery-dried grains with solubles) and corn/maize;
- Develop implementable legislation on cruelty to farm animals;
- Set up proper inspection systems;
- Provide tax rebates to humanely-produced animal products.

Recommendations for the European Union

- Should not unfairly block imports only to protect home industry;
- Should not have dual standards of animal welfare with respect to domestic farms & import; They should not “outsource” cruelty.



Recommendations for NGOs and Animal Welfare Groups

- Suggest practical measures of animal welfare that keep poultry farming viable; Care should be taken that these measures do not result in the spread of zoonoses;
- Work in tandem with industry and government;
- Generate greater awareness about welfare issues, especially on cruelty endured by birds produced industrially;
- Lobby with the export inspection agencies/other trade ministries to ensure that animal welfare is included in Free Trade Agreement as a trade barrier;
- Play a positive role in acting as a bridge between farmers and government.

Recommendations for Farmers

- Need to accept changes at various levels and work towards implementing them.
- Feed ingredients need to be tested at farm level by farmers, to ensure that end products, like egg and egg powder, do not get contaminated because of residues present in feed;
- Follow bio-safety measures as advised by the Department of Animal Husbandry and medicate birds as per the recommended schedule.

Overall, it was agreed that:

- Many seminars have been held but none on egg powder;
- This seminar brought together the poultry industry, animal welfare activists, government officials, universities & research institutes to discuss and debate issues concerning the sector;
- Several small industrialists in India would like to take up production of egg powder; The learnings from this seminar should be treated as recommendations by the stakeholders in the sector;
- Small initiatives in animal health & welfare could lead to positive changes for the industry, if they are perceived to enhance profitability;
- Happy hens lead to happy farmers.



Annexures:

Annexure 1: Speakers' Profiles

Peter Van Horne

Peter Van Horne is a senior farm economist at LEI (the Agricultural Economics Research Institute). LEI is a part of Wageningen University and Research Centre (WUR) in The Netherlands. He got his degree in farm economics at the Wageningen University in 1977. Since then, he has been working at the LEI and is fully occupied with poultry research projects for government and industry. The main subjects that he has researched during the past few years have been: economics of animal welfare; environmental protection; animal health and international competition. Since all his work deals with economics and poultry, he can be called a 'poultry economist'. His office is in Wageningen, the Netherlands.

Peter Van Horne is chairman of Working Group 1 (economics) of the World Poultry Science Association and, since 2007 he has been the economic analyst for the International Egg Commission (IEC).

Contact: peter.vanhorne@wur.nl

Dr Ashish Paturkar

Dr Ashish Paturkar is the Head of Department, Department of Veterinary Public Health in Bombay Veterinary College, Mumbai. He is a member of APEDA and Export Inspection Agency in Mumbai. He is also working as a Panel Member of the Biological Hazards of Food Safety Standards of India. He has been working in the field of food safety research since 20 years.

Contact: ashishpaturkar@gmail.com

Dr Sheila Rao

Dr Sheila Rao is a veterinarian by profession and is currently working with CUPA, the Compassion Unlimited Plus Action group, working on animal welfare issues. She worked with the Bengaluru SPCA (Society for Prevention of Cruelty to Animals) for four years, before co-founding CUPA. She is also founder trustee of the Wildlife Rescue and Rehabilitation Centre. She is a trustee of FIAPO (Federation of Indian

Animal Protection Organizations) as a delegate for CUPA. She is a member of an independent ethics committee which reviews protocols for human clinical trials. She is also a member of the Ethics Committee of Animal Experimentation.

Contact: Sheila.n.rao@gmail.com

KG Anand

Mr Anand is currently working as General Manager for Venkateshwara Hatcheries Ltd at Hyderabad (Andhra Pradesh). He is in charge of all the business units in Southern India. He is a Bachelor of Agricultural Sciences and has done his MBA from IIM (Ahmedabad). He has been working in the poultry sector since 25 years.

Contact: kg_anand@venkys.com

NG Jayasimha

Mr Jayasimha is a lawyer by education and currently works with the Humane Society International. He is a co-opted member of the Animal Welfare Board of India.

Contact: jayasimhahsi@gmail.com

Dr D Kannan

Dr Kannan works as Assistant Professor in the Department of Poultry Sciences in the Veterinary College and Research Institute, Tamil Nadu Animal and Veterinary Sciences University in Namakkal (Tamil Nadu). Being situated in the poultry hub of India, he also acts as a consultant for poultry farms in Namakkal.

Contact: kannan_kpalayam@yahoo.com

MP Satish Babu

Mr. Satish Babu is a progressive layer poultry farmer from Mysore in the state of Karnataka and also National Egg Coordination Committee (NECC) zone chairman. He owns a layer farm with a capacity of 300,000 birds. He is proprietor of Ashraya Agri Exports. He has experience of 45 years in the layer poultry industry and 11 years experience of egg powder export.

Contact: ashrayagroup@rediffmail.com

Dr AT Venugopal

Dr Venugopal, popularly known as ATV, is a retired director of Tamil Nadu Animal and Veterinary Sciences University, Chennai, Tamil Nadu. He is a consultant for many poultry farmers and small processing units in Tamil Nadu.

Contact: atvenu16@gmail.com

Dr Amit Sharma

Dr. Sharma is currently working as Assistant Director for the Export Inspection Agency (EIA) of the Export Inspection Council of India. He is a veterinary graduate from Jabalpur Veterinary College, Madhya Pradesh and a post-graduate of Veterinary Surgery from Pantnagar College, Uttarakhand. He joined the Government through the Ministry of Environment & Forest. He is working for EIA on inspecting poultry export units protocols and compliance to export standards.

Contact: aksharmadr@yahoo.co.in



Annexure 2: Participants' details

Amit Gadre

Chief Sub Editor (Features),
Agrowon,
Sakal Papers Ltd,
595, Budhawar Peth,
Pune 411 002,
Maharashtra

Amit Sharma

Assistant Director,
Export Inspection Agency,
Aman Chambers 4th Fl,
113, Maharshi Karve Road,
Mumbai 400 004

Ashish Pathurkar

Head of the Department,
Department of Public Health,
Bombay Veterinary College,
Parel, Mumbai 400 012

AT Venugopal

Director (Retired), TANUVAS,
Technical Consultant: Poultry,
No 6, 70 ft Road, Jawahar Nagar,
Chennai 600 082,
Tamil Nadu

Dinesh Auti

Branch Manager: Integration,
Suguna Poultry Farms Ltd,
Katraj Branch,
Pune, Maharashtra

Sachin Hagawane

Project Coordinator, Anthra,
Shop F, Lantana Gardens,
NDA Road, Bavdhan,
Pune 411 021,
Maharashtra

**Gayatri Rajurkar**

Project Associate, Anthra,
Shop F, Lantana Gardens,
NDA Road, Bavdhan,
Pune, 411 021, Maharashtra

Jan van der Lee

Wageningen UR Livestock Research,
PO Box 65,
8200 AB Lelystad,
The Netherlands

Jitesh Pandya

Senior Consultant, Vrutti,
19, 1 Main, 1st Cross,
Aswath Nagar, RMV II Stage,
Bengaluru 560 094

KG Anand

General Manager,
Venkateshwara Hatcheries Limited,
Shadnagar Mandal,
Veljerla, Hyderabad, 509216
Andhra Pradesh

M Mathew

General Manager, International Trade
Venkateshwara Hatcheries Ltd.,
Pune-Sinhgad Road,
Pune 411 030, Maharashtra

MM Pathak

General Manager, Feed Division,
Pranav Agro Industries,
43, Shaniwar Peth,
Opp Shaniwar Wada,
Pune 411 030, Maharashtra

N Raghunathan

Director, Vrutti,
19, 1 Main, 1st Cross,
Aswath Nagar, RMV II Stage,
Bengaluru 560 094

NG Jayasinha

Campaign Manager, Farm Animals,
Humane Society International,
Animal Welfare Board of India,
Ministry of Environment & Forest,
Paryavaran Bhavan, CGO Complex,
Lodhi Road, New Delhi 110 003

Nitya Ghotge

Director, Anthra,
Shop F, Lantana Gardens,
NDA Road, Bavdhan,
Pune, 411 021, Maharashtra

P Ghalsasi

Advisor, Poultry Diagnostic & Research Centre,
Venkateshwara Hatcheries Limited,
Pune-Solapur Road,
Loni Kalbhor,
Dist. Pune 412 201,
Maharashtra

P Sudarshan

Manager, Animal Husbandry ,
Nabard Regional Office,
Shivaji Nagar,
Pune 411 005, Maharashtra

Peter van Horne

Poultry Economist,
Animal Systems Division,
Wageningen UR LEI,
PO Box 35,
6700 AA Wageningen,
The Netherlands

PG Pedgaonkar

Dy. General Manager, Sales and Service Division,
Venkateshwara Hatcheries Pvt Ltd,
Jangli Maharaj Road,
Pune, Maharashtra

S Balakrishnan

Senior Consultant, Vrutti,
19, 1 Main, 1st Cross,
Aswath Nagar, RMV II Stage,
Bengaluru 560 094



Satish Babu

In-charge, Akshaya Poultry Farm,
Mysore, Karnataka

Sheila Rao

President, Compassion Unlimited Plus Action (CUPA),
257, 1st Cross, HAL IIInd Stage,
Indira Nagar,
Bengaluru 560 038, Karnataka

Sudhirkumar Babharey

General Manager, Suguna Poultry Farms Ltd.,
Patil Plaza, Bavdhan,
Pune, 411 021 Maharashtra

Ulhas Wagh

ICAR NAIP 3 Project,
Omega 3 Oil Unit,
Plot 12, Sangamner Cooperative Industrial Estate
Sangamner, Dist Ahmednagar, Maharashtra

A. Dadhania

General Manager, Sales and Service Division,
Venkateshwara Hatcheries Pvt Ltd,
Amul Dairy Road,
Anand, 388 001 Gujarat

M. V. Hegde

CCPI Chairman, ICAR NAIP 3 Project,
Omega 3 Oil Unit,
Plot 12, Sangamner Cooperative
Industrial Estate,
Sangamner, Dist Ahmednagar, Maharashtra

D. Kannan

Assistant Professor, Department of Poultry Sciences,
Veterinary College,
Namakkal, 637 001, Tamil Nadu

S. Sabane

Assistant General Manager,
Poultry Diagnostic & Research Centre,
Venkateshwara Hatcheries Limited,
Pune-Solapur Road,
Loni Kalbhor,
Dist. Pune 412 201, Maharashtra

Annexure 3: Workshop Photos







Annexure 4: Workshop Presentations

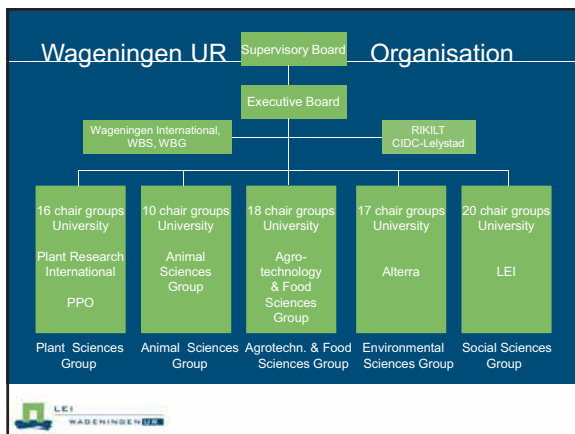
Eggs and egg products; market needs and foodsafety

Peter van Horne
Poultry Economist
Agricultural Economics Research Institute (LEI)
Wageningen-University and Research Center (WUR)
The Netherlands

Pune, January 2010

Content

- WUR
- International trade
- Food safety
 - Regulations in EU
 - Private standards
 - Market needs in Europe
- Perspective



LEI staffing

Total Number of Employees 300

• Research (120 academic level)	150
• Data collection (farm accountancy data network, surveys)	90
• General services	45
• Management	15

LEI customers

- Ministry of agriculture LNV
- Other national and regional government
- European Union (EU)
- Companies and Marketing Boards
- Other (FAO, World bank etc)

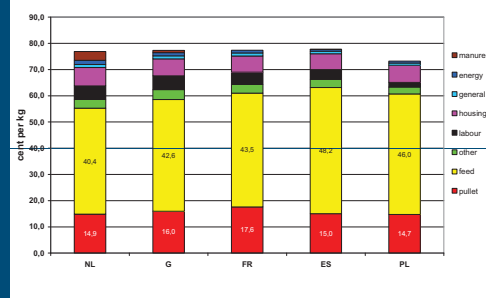
LEI poultry

- Poultry economist
- 25 years with LEI
- projects:
 - Ministry of Agriculture / EU / industry / product Boards
 - International: FAO Bangkok 2007, IEC economic analyst
 - WPSA European Federation

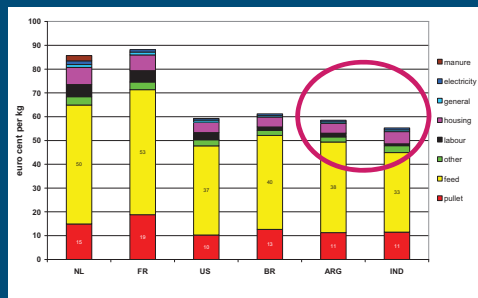
International Competition



Production cost Eggs in 2007 EU countries, Farm level (Ect/kg)



Production cost Eggs in 2008 outside EU, Farm level (Ect/kg)



Regulations in the EU

- Animal Welfare
- Environment
- Food safety



EU Import levies on eggs and egg products

* WTO agreement ?

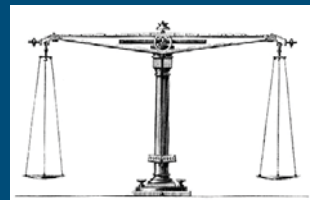
Doha round:

EU proposal to reduce import levies

* No agreement WTO



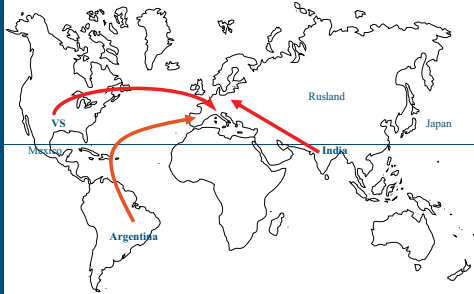
Free trade



Increase in production cost in EU due to public concern

Lower import levies

International trade in eggs and egg products



Regulations in the EU



- Animal Welfare
- Environment
- Food safety

Food safety

1. Legislation EU / country (e.g Denmark)
2. Private regulations (e.g NL IKB, UK Lion code)
3. Market (B2B, retailers like Tesco in UK)

Farm structure in the Netherlands

- Non integrated system:
- Independent part / link in the production chain
 - Hatchery (incl. PS and pullet rearing)
 - Layer farm
 - Feed mill
 - Packing station
 - Egg processing (liquid, dried)

Food safety in the Netherlands

On farm level:

- Hygiene in general (IKB)
- Salmonella (EU / NL)
- Residues control (EU / NL)



Private program IKB

- Integrated Quality Control by product Board PVE
- Control of product hygiene and welfare
 - Personal Hygiene
 - Rodent control
 - Hygiene at farm level
 - Administration
 - Farm layout
- + Code marking (traceability)
- + Welfare regulation



Salmonella control

Basics in Plan of Action

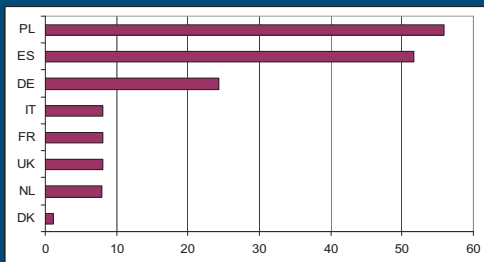
- Responsibility every part of the chain
 - (GPS, PS, hatchery, feed mill, rearing, layer farm)
- Controlling feed ingredients in Feed mills
- Hygiene standards on farms

Farm level: (regulations febr 2008 and jan 2009)

- Every 15 weeks test manure sample of layer farm
- Vaccination for Salmonella (voluntary program)
- Flock is positive: eggs to industry (pasteurisation)

Salmonella prevalence (Se/St) hens

(survey 2004/2005, EFSA 2006)



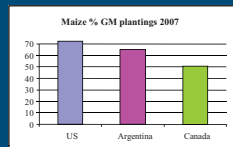
Residue control

- Part of 96/23/EC and Food law (178/2002/EG)
- Control on farm (10 egg per flock)
- Every 2 years.
- **Treatment with medication:**
 - During 'safety period' all eggs go to destruction

Other aspects of food safety

Includes:

- No GMO feed ingredients (or approved GMO)
- Ban Meat and bone meal (BSE)
- Ban growth promotors (broilers)



Market in Europe

High quality

Safe product

Traceability

Animal welfare



EU imports of Egg products

- Focus on food safety (no regulations on animal welfare)
- Authorization of exporting country
- Residue monitoring plan with requirements on:
 - Veterinary Medicines / Pesticides / Contaminants
- List of establishments
- B2B additional rules:
 - Accreditation, certification.....



Specifications egg solids (market example for whole egg)

- Chemical analyses:
pH, crude fat, crude protein, ash
- Microbiological analysis:

Total bacterial count	max 10.000 / g
Enterobacteriaceae	0 in 0.1 g
Escherichia coli	0 in 0.1 g
Salmonella	0 in 25 g
Staphylococcus	0 in 0.1 g
Coliforms	0 in 0.1 g
- Residues:
Absolutely free from residues of heavy metals, pharmaceuticals and pesticides. ZERO Tolerance



Special position of egg powder:

- Modern lab technology to detect very small amounts of residues
- Many eggs into egg powder.
- Small amount of egg product in wide range of consumer products
- No direct link to consumer:
Maybe for mayonaise, cakes and pastas.
- **In near future attention for animal welfare related to those products. Action groups !**



Europe

- More animal health problems in alternative housing systems.
- Animal welfare in conflict with
 - Animal health
 - Environment
 - CO2 footprint
 - Worker health




Thanks for your attention



peter.vanhorne@wur.nl







Indian Poultry in 1960's

- Backyard and unorganized
- Poultry Dependence On Imports
- Mostly small farms with low productivity and high mortality


Open Sided Layer Houses

- Almost 100% Layers are kept in open sided houses.
- Temperature in these houses varies from 5°C in winter nights to 40°C in summer days.

Present Poultry

- Contribution to GDP and Employment
- India in World Poultry Map
- Bigger Farm size & better managed
- Competitive Status



Present Poultry

- Rs 47,000 CRORES Contribution to GDP and Employment for 5 mill.
- India 3 rd in World Poultry for Eggs and 4th in chicken meat
- Bigger Farm size of minimum 50.000 and upto 35 lakhs & better managed i.e. cages
- Competitive Status i.e. low cost of prod.



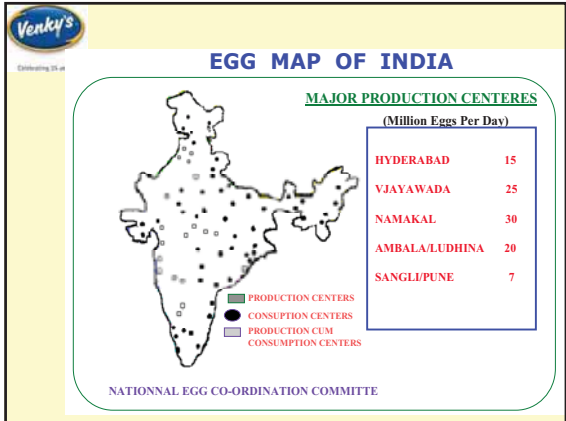

DR. B.V. RAO

Modern Indian poultry

Venky's
Celebrating 25 years

Venkateshwara Hatcheries

Total Poultry Support



Venky's
Celebrating 25 years

PROFILE OF INDIAN POULTRY

- ▶ EGG PRODUCTION MOSTLY CONCENTRATED IN A P , T N & KAR , PUN & HARYANA AND MAH
- ▶ THOUGH PER CAPITA CONSUMPTION LOW AND GROWTH EXISIT CONSTRAINTS OF DISTRUBUTION
- ▶ SIZE RANGING 10 K TO 2 MILL .
- ▶ OVER 30,000 FARMS IN LAYERS.
- ▶ EGGS SOLD MOSTLY IN SMALL QUANTITIES IN MANY RETAIL OUTLETS

Venky's
Celebrating 25 years

CENSUS OF VILLAGES

	Villages	Population (Millions)	% of Village	% of Population
< 200	120.1	12.2	21.6	2.4
200 - 499	150.7	51.2	27.1	10.1
500 - 999	135.9	97.1	24.4	19.1
1000-1999	94.5	131.5	17.0	25.9
<Total>	501.2	292.0	90.1	57.5

Venky's
Celebrating 25 years

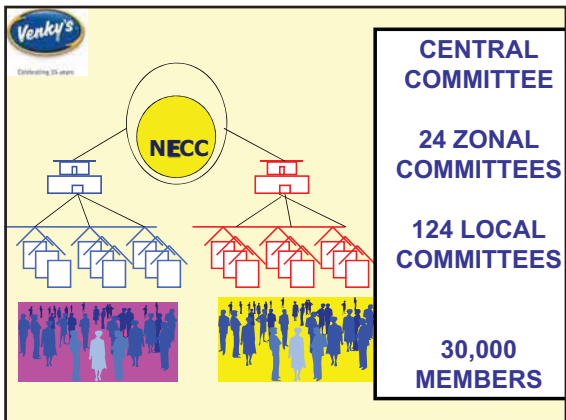
PROBLEMS OF EGG MARKETING

UNORGANIZED TRADE

MISCONCEPTION ABOUT EGGS

RELIGIOUS BELEIFS AND FESTIVALS

INADEQUATE INFRASTRUCTURE





DOMESTIC MARKET STAGNATING FOR EGGS

- **PER CAPITA AT 52-53 AND SLOW GROWTH**
- **RURAL MARKET SUBSTANTIAL BUT DIFFICULT TO TAP THE POTENTIAL**
- **MYTHS ON EGGS BEING NON-VEG , HEATY AND OTHER ALTERNATIVES ON BREAKFAST**
- **POOR INFRASTRUCTURE , POULTRY PRODUCTION IN FEW POCKETS AND LONG TRANSPORTATION ADDING TO CONSUMER PRICE**



EXPORT MARKET FOR EGGS

SHELL EGGS EXPORT MOSTLY TO MIDDLE EAST WHERE VOLUME LIMITED DUE TO PRICE COMPETITION

EGG POWDER MARKET SUBSTANTIAL BUT INVESTMENTS ARE PROHIBITIVE WITH VERY LIMITED MARGINS AND HIGH RISK

THOUGH INTIAL HYPE HIGH AND SO 7 PROJECTS CAME UP , NOW ONLY 3 ARE FUNCTIONING AND LIMITED PROSPECTS FOR NEW PROJECTS .



Egg Powder Division of Venkateshwara Hatcheries Ltd.

- Pioneers in Egg processing with 1.8 million Egg breaking capacity per day
- Recognized as the QUALITY supplier of Egg products meeting stringent Europe , Japan and respective country standards
- Catering to East & west Europe , Japan , Middle-east and Far-east



MOST IMPORTANT FOR SUCCESS OF EPP

FARM SELECTION AND MONITORING FLOCK HYGEINE IS VITAL FOR ENSURING GOOD EGGS FOR PROCESSING AT PLANT

SUPPORT , BOTH COMMERCIAL AND TECHNICAL , FROM BUYERS WHO ARE LIMITED IN EGG POWDER BUSSINESS



CRITICAL FOR EPP

CONSTANT VALIDATION AND IMPLEMENTATION OF SYSTEMS TO ENSURE PRODUCTS MEET SPECIFICATIONS OF BUYERS .

PARICIPATION IN INTERNATIONAL SEMINARS AND INTERACTION WITH TECH. TEAM OF BUYERS AND REPUTED INTERNATIONAL LABS FOR UPGRADING KNOWLEDGE AND TESTING PROTOCOLS .



Farm Selection for EPP

- Isolated large sized cage farms with minimum of 1 lakh egg production per day.
- Farms having separate brooding and growing facilities helps keep flocks healthy.
- Farms with no past history of major disease outbreaks and having good management practices ensure good productions.
- Placing QA staff of EPP at farm for 24 x 7 surveillance and monitoring of systems as per prescribed/approved guidelines

BROODING CAGE (30"x15"x15")



GROWING CAGE(20"x15"x18")



LAYING CAGE(16.5"x15"x18")



Open Sided Layer Houses

- Almost 100% Layers are kept in open sided houses.
- Temperature in these houses varies from 5°C in winter nights to 40°C in summer days.



Good Management Practices at Farm

- Good bio-security at farm ensures clean air & water and less bacteria & viral loads.
- Sufficient shed rest between flock to flock.
- Thorough cleaning and terminal disinfection with flame gun to reduce bacteria and viral load.
- Freshly inducted chicks & birds be vaccinated as per prescribed schedule.



- Strict restriction on movement of men and material in farm & no outside vehicle allowed inside farm premises.
- Foot wear to be changed by all workers/visitors and ensure farm foot wear is dipped in disinfectant solution before entering shed.
- Water , bird tissues , faecal matter be tested at prescribed intervals and reports carefully monitored by EPP.



- Egg storage be properly ventilated and eggs stored in stacks of 7 trays ensuring first-in-first out for loading to EPP
- Sheds, feed go-down, eggs storage and other premises be regularly cleaned of cobwebs, dust, fungus and such material to avoid contamination of feed and egg surface
- Sheds and store go-downs should be constructed rat proof and complete premises should be free of fruit bearing trees and tilled to keep free of weeds, grass etc.



Feed Management & Recommended Practices

- As eggs get residues mostly through feed, maximum care is needed in selection of ingredients and a balanced formula
- Maize and cereals grown in irrigated areas has less probability of use of banned pesticides like DDT, BHC etc
- Feed formula should have only approved ingredients. Use of any form of animal protein like fish, fish-meal, Meat Meal, bone meal is banned in farms supplying eggs to EPP.



- Coccidiostats, growth promoters, antibiotics not approved as per RMP is not permitted for use in feed.
- Use of toxin binders, probiotics, organic acids should be only on strict approval of EPP
- If, on need, any antibiotic (as per RMP) is utilised strict records and withdrawal is to be ensured.



STEPS TAKEN BY EPP AT PLANT

- Selection and regular monitoring of farms to ensure eggs are as per specifications of EPP.
- 24x7 supervision of farm by qualified staff specially trained by EPP for self-monitoring of residues
- Regular collection of samples of water, bird sera and tissues, feed and analysis both in-house and at outside labs.



- Ensure timely collection and transportation of eggs to plant at cool hours on first-in first out basis.
- Checking eggs at time of receipt, samples for testing on-line liquid and powder sampling and testing.
- Farm-wise processing of eggs for traceability and through finished powder testing for compliance as per statutory & buyer specifications.



PROJECTIONS FOR NEXT DECADE

- **MCKINSY'S REPORT PERDICTS SUSTAINED GROWTH OF POULTRY FOR NEXT DECADE .**
- **INDUSTRY HAS ALL THE INPUTS TO CATER TO WORLD MARKET**
 - GENETIC MATERIAL**
 - TECHNICAL PERSONNEL**
 - BREED PERFORMANCE**
 - COMPETITIVE COST OF PROD.**
- **INDIA GEOGRAPHICALLY IDEALLY LOCATED TO TAP WORLD POULTRY MARKET**



EGG POWDER PLANTS IN INDIA

SOUTH

VENKATESHWARA HATCHERIES LTD, HYDERABAD
INDO-DUCH PROTEINS LTD., HYDERABAD
OVOBEL FOODS LTD., BANGALORE
SKM FOODS (INDIA) LTD., ERODE

NORTH

WESTERN FOODS LTD., AMBALA
A.G. FOODS LTD., LUDHIANA

WEST

FOODS & INN., BOMBAY



**BUT AT PRESENT ONLY TWO ARE
FUNCTIONING !!!!!**



ISSUES FOR NEW UNITS OF EPP IN INDIA

HIGH INVESTMENT AND LOW TURNOVER ON CAPITAL
EMPLOYED 1: 2

TRADER DOMINATED , LOW MARGINS AND HIGH RISK

EXPERIENCE OF POULTRY NECESSARY TO
UNDERSTAND AND SOLVE RESIDUE ISSUES

FLUCTUATING EGG AND PRODUCT PRICES

HIGH INVENTORY AND WORKING CAPITAL NEEDS



Thank You

CRITICAL CONCERN IN MANAGING AND MAINTAINING FOOD SAFETY STANDARDS UNDER INDIAN CONDITIONS PARTICULARLY FOR EGG AND EGG PRODUCTS FOR EXPORT



Dr. A. M. Paturkar
 Professor and University Head
 Department of Veterinary Public Health
 Bombay Veterinary College,
 Parel, Mumbai- 12.



Scenario of Indian Poultry Industry

- Fourth largest egg producer in world (3.6% of global)
- Egg production is 47.3 billion egg per annum
- Current contribution to GDP is about Rs. 80 billion
- Rise in egg consumption 8-10% per annum
- Annual growth rate is 5-8%
- Lowest cost of production 2.55 US cent per egg

(mofpi.nic.in, 2009)

2

Per-capita Consumption

- The National Institute of Nutrition recommended 180 eggs per capita consumption.
- Per capita availability of egg is 1.8 kg or 42 eggs.
- Average consumption of eggs in major cities is 170 eggs
- Average consumption of eggs in smaller cities is 40 eggs
- Average consumption of undeveloped rural areas is only 5 eggs.

(mofpi.nic.in, 2009)

3

Poultry Export From India

Table: 1 Indian export of shell eggs.

Year	2006-07	2007-08	2008-09
Quantity in Kg	4,86,48,486	3,44,35,717	2,26,98,216
Values in Rupees	25,17,58,532	13,90,41,028	14,33,42,280

Table: 2 Indian export of dried egg products

Year	2006-07	2007-08	2008-09
Quantity in Kg	70,55,609	66,84,195	59,54,266
Values in Rupees	128,08,44,012	134,77,45,777	150,93,83,520

(Source: DGCIIS Annual Export)

4

- Gulf countries are one of the major importing countries.
- Export from India is very small as compare to global trade
- Present the exports are mainly in table eggs, hatching eggs, frozen eggs, egg powder, and to a small extent for live poultry (one day old chicks)

5

India's Current Food Control System

- There are two essential elements of a food safety program and they are the shared responsibilities of
 - Government.
 - Food industry.
 - The consumer

6

Food Control System

- The 'food control system' means the national, state and municipal organizations involved in either the
 - regulation,
 - inspection or
 - analysis of food and agricultural products,

together with their

- supporting legislation and rules and
- compliance activities.

Currently following food legislation are governing food qualities.

7

Prevention of Food Adulteration Act, 1954

This Act is a significant piece of legislation in India.

AIM - Protect the consumers from the supply of adulterated foods and it specifies food safety and quality standards for consumer protection.

8

Essential Commodities Act, 1955

- This Act was administered by The Ministry of Consumer Affairs, Food and Public Distribution through the states/Uts

AIM - Regulating the manufacture, commerce and distribution of essential commodities, including food. The Act also lays stress on the quality and hygiene aspects of food

9

Bureau of Indian Standards (BIS) Act, 1986

- This Act is implemented by the Ministry of Consumer Affairs, Food and Public Distribution.
- **AIM** = It formulates the standards of processed food products and operates under the voluntary certification scheme, ISI Mark.
- **Scheme of certification** is known as the Bureau of Indian Standards (BIS). The ISI Mark is mandatory for 47 food items and ingredients



10

Export (Quality Control and Inspection) Act, 1963

- This legislation, enacted by the Ministry of Commerce and Industry
- **AIM** = Development of export trade of India through quality control and inspection
- **Implementing authority-**
- (Export Inspection Council) and the five Export Inspection Agencies (EIA) functioning under the Council.
- With the establishment of the WTO and the signing of the SPS Agreement, the role of certification in assuring the quality and safety of food products has become significant.

11

International Standards:

- **The Codex Alimentarius Commission (Codex)-**

Attached to the FAO of United Nations and WHO

AIM -

1. Sets guideline international standards for foodstuffs
2. Protect the health of consumers and ensure fair practices in food trade arena.
3. Standard are established for all types of raw unprocessed foods and some processed foods. foods may be either plant or animal origin, and be for consumption by human or farm animals

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International Standards contd...

These standards include

- **Maximum Residue Limits (MRLs)** for agricultural and veterinary chemical residues
- **Maximum Permissible Concentration (MPCs)** for heavy metals such as Cadmium, Lead and Mercury.
- **Extraneous Residue Limits (ERLs)** for some of environmental contaminant in foods

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MRLs for Pesticides in Egg and Egg products

Pesticides	PFA MRLs (mg/kg or ppm)	Codex MRLs (mg/kg or ppm)	EU MRLs (mg/kg or ppm)
Organochlorines			
1. Gamma HCH	0.1	0.01	--
2. Aldrin	0.1	0.1	0.05
3. DDT	0.05	0.1	--
4. Endosulfan	0.1	0.03	--
Organophosphorus			
1. Phorate	0.05	0.05	--
2. Chlorpyrifos	--	0.01	0.05
3. Phenthoate	0.05	--	--
4. Profenofos	--	0.02	--
5. Ethion	0.2	--	--

Conti..

Pesticides	PFA MRLs (mg/kg or ppm)	Codex MRLs (mg/kg or ppm)	EU MRLs (mg/kg or ppm)	USDA MRLs (mg/kg or ppm)
Organophosphorus				
6. Acephate	--	--	0.01	
7. Malathion	--	--	--	0.1
Synthetic Pyrethroids				
1. Cypermethrin	--	0.05	--	0.05
2. Deltamethrin	--	0.02	--	
3. Bifenthrin	--	--	0.05	
4. Permethrin	--	--	--	1
Carbamates				
Carbaryl	--	--	--	0.5

MRLs for veterinary drug residues in Egg and Egg products

Drugs	EIC MRLs in ppm	USDA MRLs in ppm
1. Amprolium	Absent	4
2. Bacitracin	--	0.5
3. Chlortetracycline	0.5	0.4
4. Tylosin	0.2	0.2
5. Penicillin	--	0
6. Sulphonamides	0.05	--
7. Neomycin	0.5	--

Extraneous Residue Limits (ERLs) for some of the environmental contaminants in Egg and Egg products

Environmental contaminants	Extraneous Residue Limits (ERLs) (ng/kg egg fat or ppb)	Extraneous Residue Limits (ERLs)(ng/kg whole egg) Or ppb
Dioxins and polychlorinated biphenyls (E.g. Aroclor®, Clophens®, Fenclores®)	0.71	0.07

Source: USDA, FSIS

Maximum Permissible Concentration (MPCs) for heavy metals in Egg and egg products

Heavy metal	Maximum Permissible Concentration (mg/kg or ppm)
1. Arsenic (As)	0.1
2. Lead (Pb)	0.1
3. Copper (Cu)	2
4. Mercury (Hg)	1
5. Cadmium (Cd)	0.023

Source: Codex Alimentarius commission

United Nations Economic Commission for Europe (UNECE), 1986

- Mostly deals with the trade, marketing and commercial quality control of hen's egg products for use in the food industry moving in international trade between and to UNECE member countries .
- Egg product marketed as "UNECE QUALITY". These products may be in the dried, liquid or frozen form.

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UNECE Standard Provisions Concerning Quality

A. General quality criteria



Egg products must be

- Homogeneous,
- Fit for human consumption,
- Practically free from shell fragments and foreign matter.
- The taste, colour and odour of egg products shall be natural and characteristic of each product.
- In the case of dried egg products these shall be easily reconstituted.

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B: Microbiological Criteria

- 1. Salmonellae:**
 - *Salmonella* organisms should not be recovered from any of ten sample units. (n= 10, c = 0, m = 0).
 - In products intended for special dietary purposes. (n = 30, c = 0, m = 0).
- 2. Mesophilic aerobic bacteria**

Mesophilic aerobic bacteria should not be recovered from any of five sample units examined (n = 5, c = 2, m = 5 x 10⁴, M = 10⁶).
- 3. Coliform bacteria**
 - Coliform bacteria should not be recovered from any of five sample units examined (n = 5, c = 2, m = 10, M = 10³).

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C. Compositional Criteria

- Liquid, frozen or dried whole egg, egg yolk and egg albumen shall comply with the specifications given below.
- The percentages expressing composition shall be based on the egg portion only of the egg product.

PRODUCT	EGG SOLIDS CONTENT (minimum percent)	FAT CONTENT (minimum percent)	FREE FATTY ACIDS (maximum percent)
Liquid and frozen whole egg	23.5	9.8	-
Liquid and frozen egg yolk	43.0	26.0	-
Liquid and frozen egg albumen	10.5	-	-
Dried whole egg	95.0	39.0	3.5
Dried egg yolk	95.0	56.0	3.5
Pan dried egg albumen	84.0	-	-
Spray dried egg albumen	92.0	-	-

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D. Provisions Concerning Food Additives And Contaminants

- Egg products shall not contain contaminants such as pesticide residues, antibiotics, hormones or heavy metal contaminants in amounts greater than those specified in the legislation of the importing country.

E. Provisions Concerning Hygiene

The hygiene requirements for the production of egg products and the premises, equipment and personnel used or engaged in their production should be as specified in the Joint FAO/WHO Codex Alimentarius Commission Code of Hygienic Practice for Egg Products (CAC RCP 15-1976, Codex Alimentarius Commission ALINORM 85 13).

23

F. Provisions Concerning Packing And Transport

1. Egg products packed in such a manner so as to protect them adequately and to prevent contamination.
The packaging material shall not impart any taste, odour or colour to the egg products and shall be in accordance with legislation of the importing country.
2. The transport of egg products should be in accordance with the requirements of the Joint FAO/WHO Codex Alimentarius Commission, Code of Hygienic Practice for egg products.

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Guidelines for Egg Products Processing

- The egg products produced should be safe and suitable for human consumption.
- Eggs for processing should be visibly clean prior to breaking and separating.
- Cracked eggs may be processed. Broken eggs should not be processed and should be disposed off in a safe manner.
- Dirty eggs should be disposed off in a safe manner or may be cleaned.

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(i) Treatments

Egg products subjected to a microbicidal treatment including heat treatment to ensure the products are safe and suitable.

(ii) Storage and distribution

Egg products should be protected against external agents and contamination e.g. direct sun light, excessive heating, moisture, external contaminants, and from rapid temperature changes

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Critical concern under Indian context

- **Raw egg quality**
- **Shell washing and sanitation**
- **Transportation of egg**
- **Monitoring of layer farms for chemical contaminants and diseases.**
- **Monitoring of environmental hygiene.**

Conclusions

- With the increasing global demand for egg and egg products and health concern regarding their safety among the consumers has made the global trade highly competitive.
- So strict vigilance in managing and maintaining food safety standards at national and international level is the need of the hour in order to ensure the international acceptance of Indian products.
- Egg processing plants in India are very few. So, there is a need to increase the number of egg processing plants which can handle large quantity of eggs for processing with modern state-of-art facilities.

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Conclusions

contd...

- These plants should be established with public-private partnership and implement the systems like **ISO: 22000** and **HACCP** and certified by regulatory authorities.
- Establishing both forward and backward **traceability chain** from egg processing plant to consumers will help to build consumer confidence.
- Ultimately, these actions will help to meet the international food safety standards and promote the export of egg and egg products from India to other developed nations.

29



Good Agricultural Practices including Animal Welfare to meet Export Standard


Dr.A.T.Venugopalan, Ph.D.
Director (Rtired) Tanuvas, Chennai 600051

- International Trade
 - Wto
 - Sps
 - Oie
- Food Safety In Eu Developments
 - 1997
 - 2000
 - 2002
 - 2004
 - 2005
 - 2008
 - 2009
- Animal Diseases Covered Under Food Safety
 - Avian Influenza
 - Salmonellosis (Zoonotic Potential)
 - New Castle Disease
- Good Agricultural Practices
 - Premises
 - Management
 - Antibiotics
 - Feed/Water
 - Sanitation
 - Bio Security
- Avian Influenza Control
 - HpNai Free Compart Ment
 - Hpnai Free Establishment
 - Official Veterinarian
 - Official Accredited Laboratory
 - Official Methodology
 - Official Sampling
- Salmonellosis
 - Source Of Chicks
 - Screening For Salmonella
 - Boot Swab
 - Iso 6579
 - R2073/ 2005
 - Rodent Control
- New Castle Disease
 - Icpi Value
 - Seed Material Of Nd Vaccine
 - Live+Inactivated Nd Vaccine
 - Pasteurization Temperature And Duration

- Animal Welfare
Animal Housing
Cost Of Production
Egg Processing
Table Eggs
- Bio Security
Feed
Water
Environment
- Approved Chemo Sterilants
Asc
Clo2
Paa
- Indigenous Production Of Chemo Sterilants
Sc 25
Ca10
Ca20
Hcl
- Evaluation Of Sanitary Status
Plate Exposure
Feed Sanitation
Water Sanitation
Environmental Sanitation
Periodicity
- Oie Official Tests For International Trade
Serology
Mortality
Production
- Alternative To Antibiotics
Garlic
Formalin In Feed
Asc In Water
Mms
- Anti Oxidants
Vitamin C
Vitamin A
Vitamin E
Selenium
- Vaccine And Vaccination
Vaccination 0 To 7 Days
Vaccination Against Ai
Vaccination Against Ib

- Animal Health Laws
Act 9 Of 1898
Act 27 Of 2009
Food Safety And Standard Act 2006
- Eu Import Requirements
Approved Establishments
Residues—Directive 96/23
Veterinary Drugs R2377 Of 90
Hygiene R 852/853/854/882 Of 2004
- Microbiological Criteria R 2073 Of 2005
Veterinary Certificate R 798/2008 R 411 /2009
Feed Community Register Of Feed Additives
- Additives With E Number
Veterinary Medicine
Community Register Of Veterinary Medicine
Layer Management
Hyline Library 2007
Broiler Ross Manual 2009
Salmonella Control Regulations Of Eu And Usa
Avian Influenza
H5n1
Eu Directive 94/2005
- Egg Processing
Cac
Cfr Of Usa
Fao

Thank You



Animal welfare for layers: EU standards and worldwide perspective

Peter van Horne

Agricultural Economics Research institute (LEI)
Wageningen- University and Research Center (WUR)

Pune, January 2010



Content

- EU Standards for layers
- Countries ahead of EU
- Rest of the world
- Market
- Discussion
- Conclusions



General

- Housing laying hens:
 - Mainly cages = most efficient + reliable
- Europe:
 - discussion on welfare has led to a ban on traditional cages
 - Welfare issues:
 - expressing behaviour
 - harming management practices (e.g. induced molting, beak trimming)



Housing systems for layers



Europe:
Closed housing
Highly mechanized
Cages: high density

South America and Asia:
Open housing
Low-medium mechanized
Cages: high density



EU regulations in time

- EU standard till 2003:
 - cage with 450 cm² per hen
- EU standard from 2003:
 - cage / 550 cm² per hen
- EU standards from 2012:
 - enriched cage with 750 cm² per hen
 - Alternative system



Welfare regulations layers

EU in 2012:

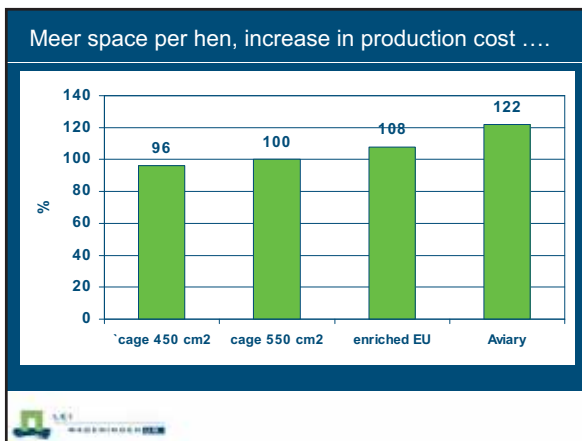
- Ban on traditional cages and housing in **enriched** cages (area 750 cm² per hen) or alternative systems (deep litter or free range).
- EU: proper **beak trimming** on birds younger than 10 days.



Enriched cage

- Perch
- Laying nest
- Litter
- Cage height
- More space

Deep litter / Aviary system



Basic assumptions enriched cages:

- Based on (experimental) research in different countries
- Enriched cage available with:
 - Good production results
 - No extra second grade eggs
 - No extra mortality
 - No extra feed intake per hen
- Extra investment in equipment (more space, cage height)

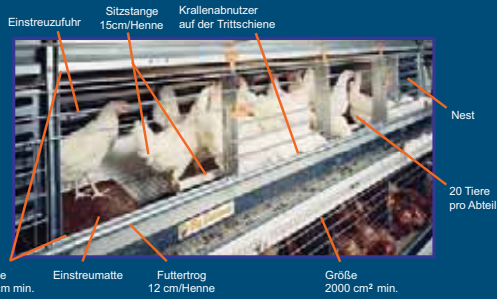
Basic assumptions alternative systems:

- Based on Dutch experiences with aviaries:
 - Shorter laying period
 - Lower production
 - Higher mortality
 - Higher feed intake per hen
- Extra investment (lower density/m²)
- Extra labour (less hens per worker)
- Pullet more expensive (floorsystem)

Ahead of EU regulations

- Switzerland (cage ban)
- Sweden (early ban trad. cage)
- Austria (early ban, no cages)
- Germany (early ban, colony)
- Netherlands (colony)

Germany: big enriched cage



Colony cage: Germany and the Netherlands

Higher
890 cm²
2 perches



KleinGruppe



Welfare regulations layers

- EU regulations: proper **beak trimming** on birds younger than 10 days.



Regulations on debeaking in the EU (Fiks, 2007)



Red: ban
Yellow: regulated
Blue: EU rules



Market in Europe

High quality

Safe product

Traceability

Animal welfare



Code in eggs

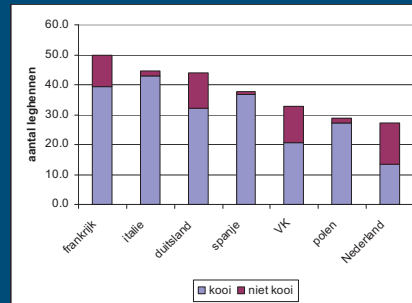
Egg code, example:

2NL9024501
3ES46156012

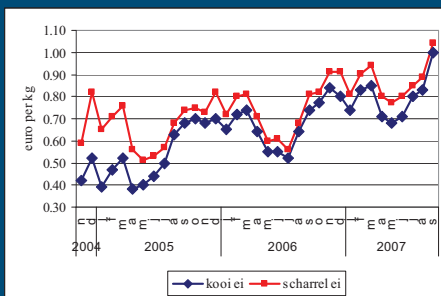
2= barn egg
NL= Netherlands
90245=farm
01 = poultry house



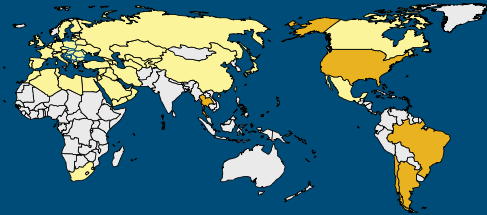
Main egg producers in the EU (situation 2006/2007)



Price for cage and barn eggs (NL market price)



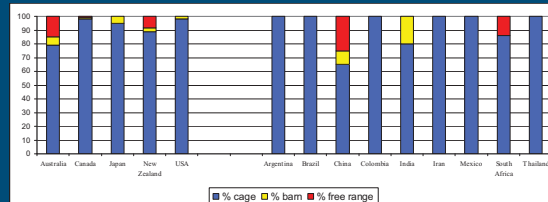
World



Rest of the world

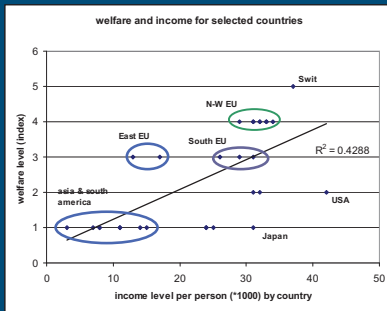
- USA: UEP industry guidelines
- Australia/ NZ: layer welfare legislation
- California: Referendum: ban on conventional cages
- Other: Brazil / India / Ukraine no legislation cage / 350 to 400 cm²

Housing systems (%) in selected countries (IEC)

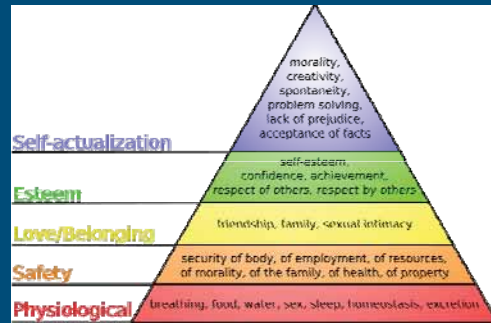


Data IEC

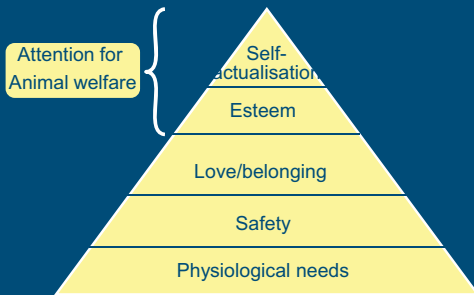
Relation welfare legislation and income worldwide



Maslow's hierarchy of Needs



Maslow and animal welfare by consumers



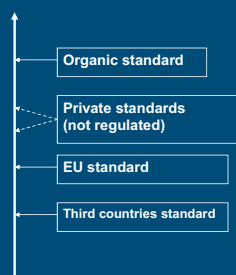
Meydane, Jean-Guillaume, Dossin, LEI

LEI, G. Tacken



Global comparison of standards

Animal welfare level



- Private voluntary standards by retailers, processors vary widely (e.g France)
- EU rules are above international levels (OIE).
- Non EU countries can comply with EU standards



Trade

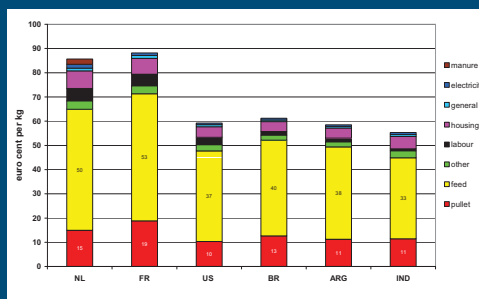


EU regulations:
What will be the impact on global trade



ISPA

Production cost Eggs in 2008 outside EU, Farm level (Ect/kg)



Trade

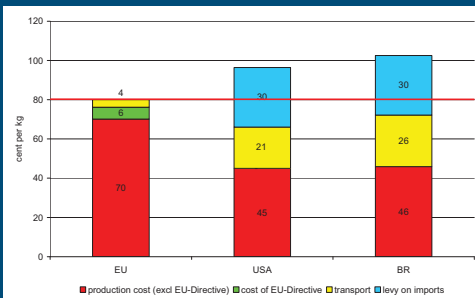
- Worldwide trade in eggs is limited
- 2% of the eggs reach the world market
- Mainly regional trade.
- Future:
 - more trade in egg products: egg powder
 - Egg powder: long storage, low transportation cost
 - Chances for low cost countries: Brazil, India, Ukraine



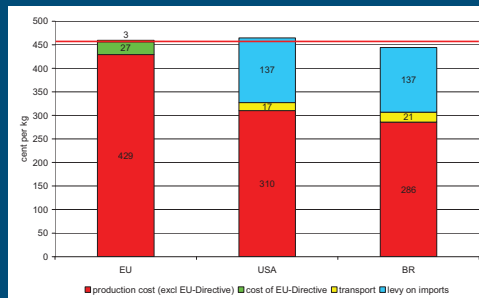
Towards 2012.....



Offerprice shell eggs in EU (data 2006) Full tariff



Offerprice whole egg powder in EU (prices 2006) full tariff



EU policy

- Focus on animal welfare
- Discussion on world wide standards through World Organization for Animal Health (OIE)
- Animal welfare on WTO agenda
- Labeling to provide consumers with information
- Differentiated Import Tariffs or Taxes.



Conclusions on animal welfare

- **At this moment no EU trade barrier based on animal welfare.**
- Market demands in B2B or food industry ?
- Focus on foodsafety.
- Future of EU egg sector in hands of politicians:
 - Regulations housing systems
 - Decide on import levies



Where to go ?



Conclusions

- EU: welfare is density (cm^2 per birds/ m^2), enrichment and beak-trimming
- Outside EU no regulations. In general high density in traditional cages.
- Small trade flows in eggs world wide
- Trade flows in egg powder will increase
- Welfare regulations will have a large impact on future development in trade flows.



Who will follow.....



Thanks for your attention

Peter.vanhome@wur.nl

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INTRODUCTION

CUPA, Compassion Unlimited Plus Action, Animal welfare organisation registered in 1991 widely recognised at National & International level

A part of National Board - CPCSEA & Inspections

Working along with City Corporation for management of street dog population since 1995

Well equipped hospital & animal shelter at Veterinary College campus – Hebbal, Bangalore

Treats around 2000 in-patients & out-patients, abused & abandoned animals every month
24 hr Clinic and Ambulance Service from 7am to 11pm

Wildlife Rescue & Rehabilitation Centre at Bannerghatta, Bangalore for treatment of injured and orphaned urban wildlife

STATISTICS

- India still very dependent on Animal Power
- 80 million bullocks and 8 million buffaloes provide 40 million HP & energy worth 20 million Euros
- Saves 6 million tonnes of petroleum worth 15 million Euros
- India is now the fourth largest producer of eggs, with 150 million laying hens.
- 60% of these are in battery cages

- AP accounts for the maximum egg production
- Punjab produces 15 million eggs, TN 8mill., Karnataka – 7.5 mill., Maharashtra 6 million
- Poultry industry has been registering an annual growth of 12% - 15 %.
- Fastest among any meat sector in the country
- Exports of Poultry products increased from Rs. 318.17 cr in 2006 – 07 to Rs. 441.09 cr in 2007 – 08.
- Employment to at least 10 crore people.
- Contributes to 10 % of GDP or Rs.2000 crore to nation's economy

GLOBALISATION, TRADE & ANIMAL WELFARE

- Globalisation and intensification of animal production revolutionised International Trade
- Between these two, welfare has been the loser
- Western world has come a full circle – post World War II intensive production to now trying to popularise backyard farming .
- Intensive farming meant sow stalls, veal crates, feed lots, battery cages, forced feed, unnatural feed etc
- World Organisation for Animal Health (O I E) setting standards for safe - guarding trade
- Link between Animal Welfare and Animal Health has been widely recognised and scientifically documented
- Healthy animal provides healthy meat
- Has been shown that eggs from hens raised on pasture may contain 1/3 less cholesterol, ¼ less saturated fat, 2/3 more Vit A, 2 times more Omega 3 FA, 3 times more Vit E & 7 times more beta carotene

- Civil Society dialogue is becoming a major factor in formulation of trade policies
- E U especially is taking the lead in formulating change in Farm Animal welfare
- Imports into Europe would only be from countries following similar standards, though India could export to other countries which would not have such stringent specifications
- Inclusion of Animal Welfare in Trade Agreements would result in increased co-operation between Vet. authorities in both countries, increased training facilities for vets and workers in ancillary units, capacity building
- Mutual exchange of information
- Technical assistance for improvement of productivity
- Scientific and technological experiments

- Specific projects aimed at supporting sanitary, phyto sanitary, environment and food quality measures
- All these measures have been introduced in bilateral agreements between EU-Chile, EU-Canada, Argentina, Uruguay



WELFARE CONCERNS

- The five freedoms for welfare of animals:
 - freedom from hunger, thirst and malnutrition
 - freedom from fear and distress
 - freedom from physical and thermal discomfort
 - freedom from pain, injury and disease
 - freedom to express normal patterns of behaviour
- In the poultry industry, these have been violated at one stage or the other:
 - overcrowding, confinement in cages < 1 sq ft,
 - debeaking, use of antibiotic in feed, forced moulting,
 - inhumane transportation and slaughter

LAWS

- India has some of the best animal protection laws
- No laws specifically for farm animals
- Many laws can impact on the farm animal situation and can be used
- Prevention of Cruelty to Animals Act, 1960, Section 11 calls upon all owners and custodians to ensure that animals are given adequate food, drink, exercise, shelter and veterinary care.
- Transport of Animals Rules of 1978 prohibits transport of animals in an inhuman manner and in a manner that causes unnecessary pain and suffering
- Establishes specific conditions for transport of animals by foot, rail, road and air. Standard measurements specified for containers/cages for all animals
- Transport of Poultry, Sec 84 (a) specifies that " wire mesh or net of any material shall not be used as a bottom for containers ", but wire mesh cages are the most commonly used
- Lacuna is in the enforcement
- Other applicable laws – Environment Protection Act of 1986, Sec 3 (1) & (2); Sec. 7, (25)
- The Air (Prevention and Control of Pollution) Act, 1981

POLLUTION

- Pollution from faecal matter, from cleaning of cages and housing areas
- Most piggeries empty their waste into nearby fields
- Apart from pollution, depletion of resources should be considered and evaluated
- Water resource most important
- Water used by livestock sector exceeds 8% of global human water use.
- Decision makers only take into account water that is drunk by the animals
- Water used for cleaning, washing, for feed production and any ancillary activity (e.g. Tanning as part of cattle industry) never calculated
- Includes depletion due to contamination by animal wastes
- This is called virtual water

IMPACT ON ENVIRONMENT

- Livestock excreta in 2004 estimated to contain 135 mill tonnes of Nitrogen and 58 million tonnes of Phosphorous
- Drug residues in excreta – antibiotics, hormones, heavy metals – and biological contamination represent a public health hazard
- Unnatural eutrophication of lakes and water bodies
- Has a major impact on biodiversity, by way of land use change, climate change, over exploitation, invasive alien species
- For eg: Volume of Trade Flow of Poultry meat and related sea transport CO₂ emissions (2001 – 2003) from (a) USA to Russia, Mexico, Canada & Far East (b) Brazil to Japan, HK, Russia, Saudi Arabia, EU (c) EU to Russia and Saudi (d) Thailand to EU, Japan and (e) HK to China totals 4,761,000 tonnes of meat, resulting in 257,000 tonnes of fossil fuel CO₂ emissions

CUPA Poultry project

Objective of the Project

- Create awareness on violation of laws on transport of poultry.
- Create awareness on cruelty involved in poor transportation methods of poultry.
- Initiate Departments of Animal Husbandry & Police to implement the law and take action against offenders who violate poultry transportation rules.

Action Initiated

- CUPA sought the assistance of the Dept. of Animal Husbandry, Karnataka and the Karnataka Police highlighting the violations.
- Workshops held with the Poultry Wholesalers & Retailers in City Market areas emphasising on the violations and awareness on recommended crates for transportation of poultry.
- Identified manufacturer of approved transportation cages.
- Meetings held with Government Officials to reduce surcharge on approved crates from 12% to 4%; yet to be initiated.

Poultry Transport



Alternatives in POULTRY transport - Scooters and Bicycles



- Plastic cages for use on Scooters & Bicycles
- Capacity 12 to 15 birds per cage
- Rs. 950/- per cage

Option 2



- Plastic crate for use on Scooters & Bicycles
- Capacity 4 to 5 birds per cage
- Rs. 500/- per cage



- Metal cages for use on 2-wheelers
- Being used in developing nations such as, Vietnam, Thailand, etc.
- Capacity 30 to 35 birds per cage
- Rs 2500/- per cage

CRUELTIES

- Numerous and wide spread and utterly inhumane
- Prevalent against all animals
- Prevalent at all levels of production from birth through housing, feeding, transport and finally slaughter
- Government, industry, retailers all resistant to any kind of modification, but the mantra of 'profit at any cost' must change
- Stake holders must realise that animal welfare and human health are inter-linked
- Welfare is not just a matter of emotion; scientific proof of adverse side effects is widely available

GLOBAL TRENDS IN ANIMAL WELFARE

- People becoming more aware of what is happening in the farmed animal business
- With civil society dialogue becoming an integral part of trade talks in many forums, changes are happening
- Some of the changes:
 - Starting 2013, prolonged use of sow stalls not allowed already banned in UK, Some countries moving ahead of deadline – Sow stalls already banned in UK, Sweden, Denmark, Netherlands, Finland. Similar legislation in Philippines.
- Battery cages banned from 2012, but already banned in Austria
- In USA, as in India, no federal legislation for farmed animals except for Rules on slaughter and live transport
- 2002 – sow stalls banned in Florida; in 2006, these and veal crates also banned in Arizona
- Israel has banned foie gras

- Scientific analysis in the EU has led to industrial animal farming being restricted on animal welfare grounds
- Legislation based on scientific evidence
- Many food retailers, manufacturers, restaurants and caterers also starting to change policies
- In 2007, Burger King, the world's second largest hamburger chain, announced adoption of many A W policies and has implemented purchasing preference for cage-free eggs and crate-free pork
- Subway, Sodexo, McDonald's, Unilever, Cadbury are other corporates opting for cage-free eggs
- Google, Microsoft, The House of Commons, Staff canteens in many companies are all following suit
- Ice cream producer, Ben & Jerry's is also phasing out its use of cage eggs

CONCLUSION

- A W is as much about humans as it is about animals
- Cannot expect the whole world to go vegetarian or vegan, but a fair balance can be maintained with a little thought and care
- Sustainable agriculture and farming is possible
- The central team examining farmer suicides in Maharashtra and AP found that no farmer who had even a couple of head of cattle, had committed suicide
- Decision makers should take into account all these factors while formulating policy viz. Economic, social, health and environment objectives
- In India, produce from intensive farming does not reach the people who really need it, whereas malnutrition can be effectively addressed with backyard farming
- Production by the masses is much more effective than mass production

ANIMAL WELFARE CONCERNS IN INDUSTRIALIZED POULTRY SYSTEMS

N.G.Jayasimha, BA (LAW) LLB
Co-opted Member, AWBI; Campaign Manager, Humane Society International

Fundamental Principles

- There is a critical relationship between animal health and animal welfare.
- The use of animals carries with it an ethical responsibility to ensure the welfare of such animals to the greatest extent practicable.
- The internationally recognised 'five freedoms' provide valuable guidance in animal welfare.

Five Freedoms

- **Freedom from Hunger and Thirst** - by ready access to fresh water and a diet to maintain full health and vigour.
- **Freedom from Discomfort** - by providing an appropriate environment including shelter and a comfortable resting area.
- **Freedom from Pain, Injury or Disease** - by prevention or rapid diagnosis and treatment.
- **Freedom to Express Normal Behaviour** - by providing sufficient space, proper facilities and company of the animal's own kind.
- **Freedom from Fear and Distress** - by ensuring conditions and treatment which avoid mental suffering.

The Egg Industry

- 230 million hens in India.
- 80-90 percent in battery cages. Non-cage housing refers to non-commercial backyard farming.
- India is one of the top 3 egg producers in the world, producing over 45 billion eggs per year, and that number is growing (5% per year).
- Living space/hen < A4 size sheet of paper.

Main Egg Production Systems

- The Battery Cage is the most widely used system.
- The other system such as the barn system, deep litter system, free range system do not form the part of the mainstream commercial egg production.

What's wrong with battery cage?

- More than 200 million egg laying hens on factory farms in India, accounting for approximately 80 percent of the nation's egg production, are confined to tiny battery cages so restrictive they can't even spread their wings.
- With no opportunity to nest, dust bathe, perch, forage, or exhibit most other natural behaviors, these birds endure lives wrought with suffering.
- The space allowance prescribed for a bird in the country is between 300 to 400 cm² in comparison to 550 cm² in the EU. Proper exercise is impossible in these conditions.

What's wrong with battery cage?

Cage Free: The Future of Egg Production

- The industry must ensure that the present practice of battery cage based production be phased and a alternate production system that provides for the following is introduced and promoted

Commercial Cage Free Farm



Commercial Cage Free Farm



Commercial Cage Free Farm



Scientific evidence against battery cages:

- Scientific Veterinary Committee of the of the European Commission, 1996: "It is clear that because of its small size and its barrenness, the battery cage as used at present has inherent severe disadvantages for the welfare of hens"
- 2005 EFSA report: inability to behave naturally and high levels of osteoporosis pose a particularly severe threat to the welfare of battery hens.
- 2006 *LayWel report*: welfare of hens is "severely compromised" in conventional battery cages & these cages do not have the potential to provide satisfactory welfare

Changing Times – Changing Minds

- EU Laying Hens Directive 1999
 - ▣ Prohibits installation of any new conventional battery cages from 2003
 - ▣ Prohibits conventional battery cages from 2012
- In the US, the states of California and Michigan passed legislation calling for the phase out of battery cages.

Changing Consumer Trends

- On a scale from 1 to 10, EU citizens give animal welfare an importance rating of 7.8 (2007 Eurobarometer survey)
- Growing recognition that production should not just be sustainable but also humane.
- Consumers have demonstrated their willingness to pay more for higher welfare eggs
- 80% of the EU consumers are concerned about animal welfare
- 5% of the EU consumers volunteer animal welfare as concern

Consumer opposition to farm animal mistreatment

- 4 out of 5 Americans agree there should be effective laws that protect farm animals from cruelty and abuse.
- 4 out of 5 Americans agree that poultry should be protected by the Humane Methods of Slaughter Act
- 96% of Americans agree that animals deserve at least some protection from harm and exploitation
- 4 out of 5 Americans agree that “farm animals have roughly the same ability to feel pain and discomfort as humans”
- 3 out of 4 Americans disagree that “low meat prices are more important than the well-being of farm animals”
- 95% of Americans agree that “it is important to me that animals on farms are well cared for”

- Even though no such survey has been conducted in India, considering the fact that 75 percent of the eggs produced in India are consumed by 25 percent of the population living in urban areas. This market segment, similar to consumers in western nations, and hence similar findings can be anticipated.

This change in trend is a golden trade opportunity (both domestic and international)

- Producers who use animal-friendly technologies have an incentive to reveal that to the consumer
- **FAO: January 09** - compliance with animal welfare standards can open access to international markets for products from less developed countries
- **International Finance Corporation:**
 - ▣ Growing market opportunities for food produced in animal welfare friendly systems
 - ▣ Opportunity to become producer of choice for retailers & consumers concerned with animal health & welfare, food safety & quality and the environment

Cage free eggs: A Market growing exponentially.

Retailers:

- No Dutch supermarkets sell battery eggs
- No Austrian supermarkets sell battery eggs
- Coop Italia, Italy’s largest supermarket chain, only sells cage-free eggs under its own brand
- In the US, sales of cage-free eggs to grocery shoppers increased 150% in three years by the industry's own calculations.

Fast Food Chains:

- In UK McDonald's only uses free range eggs – includes shell eggs & nearly all eggs used in products
- Over 90% of McDonald's eggs across 23 EU countries are now free-range
- McDonald's committed to phasing out remaining caged whole eggs across the EU27 by end of 2010
- American Fast-food giants Burger King (North America), Carl's Jr., and Hardees have begun transitioning to cage-free eggs.

Food service sector

- Sodexo Belgium is part of Sodexo, the third biggest foodservice operator in Europe, Sodexo Belgium only uses cage-free whole eggs & liquid eggs in all Belgian catering contracts
- Compass Group—the world's largest food service provider—has announced its first step toward eliminating its use of cage eggs.
- Ikea Belgium only uses whole barn eggs in breakfasts & cold plates served in their restaurants.
- Subway in UK & Ireland uses only free range eggs in its omelettes & has committed to going free range on all eggs used in other products e.g. sauces
- Omni Hotels has switched to cage-free eggs at all its locations in the US
- The Fairmont hotel chain also has a procurement policy in favor of more humanely raised foods in the US.

Food manufacturers also switching to cage-free

- Unilever -- second largest food manufacturer in Europe will be cage-free throughout western Europe in all brands of mayonnaise & dressings by 2012
- Cadbury -- World's largest confectionary brand. Cadbury has committed to move all eggs used in its Creme Eggs to free range

Staff canteens also switching to cage free.

- Google only uses cage-free eggs in its staff catering across Europe and US.
- Sky Television in UK has committed to using free range eggs across all catering at its main site
- Microsoft UK , US is committed to going cagefree
- AOL enacted cage-free egg policies in their cafeterias in the US.

Business & Trade opportunities:

- Margins on free range & barn eggs are higher than on battery eggs: European Commission's socio-economic report
- Opportunity to supply unmet demand (both in domestic market and export market)
- Food industry firms want to change but need to find suppliers of non-cage eggs & product

Thank you for taking up this challenge

Have a good meeting!

Animal welfare issues to meet export standards

Opportunities and Challenges for egg powder export

Dr.D.Kannan

Assistant Professor (SS),
Poultry Science,
Veterinary College and Research Institute,
Namakkal - 637 002.



Poultry Industry - 2010

- ★ Growth of Poultry Industry in India.
- ★ Transformed itself from the age-old backyard farming into a dynamic agri-based industry.
- ★ Development is not only been in size but also in productivity, sophistication and quality.
- ★ More than 80% export of poultry products in India originates from Tamil Nadu.

- ★ During the year 2009, 110 million table and 50-80 million hatching eggs were exported from India.
- ★ Egg powder to an equivalent of 30 lakhs eggs per day is also exported.
- ★ Export of poultry meat from India is on juvenile stage.
- ★ Export of poultry products is being a diverse issues including hen welfare (which includes hen health), production costs, food safety, occupational health and safety and environmental issues.

Animal welfare

Animal Welfare is a state that encompasses many complex aspects of the animals and includes

Biological- Physical, physiological & behavioral

- Physiological – How the animals feel
- Ethical/behavioral – quality of life

Normal behaviour

Birds Habit:



Preferences for bushes and woods, social groups, sleeping in trees, seasonal breeding, foraging and social hierarchy

Five freedom :

1. Hunger, thirst
2. Pain
3. Discomfort
4. Normal behaviour
5. Fear and distress

Poultry products for export

- ★ Identifying and monitoring the most critical points in the production system rather than relying on the testing of the final product.
- ★ **Healthy poultry products to meet export**
 - Pre-harvest (On farm) approach
 - Post-harvest (Off farm) approach

Pre-harvest (On farm) Approach

Involves raising of healthy chicken in clean environment

- Raising of healthy baby chicks
- Feeding management
- Water management
- Housing management
- Disease control management




Raising of healthy baby chicks

- ✦ Pens used for rearing of chicks should be cleaned properly and disinfected with suitable disinfectant after a period of vacation.
- ✦ Chicks should be purchased from reputed breeders.
- ✦ Immediately after receiving baby chick, care should be taken for watering, nutrition and brooding management.
- ✦ Prophylactic health cover should be followed as per prescribed guidelines.






Feeding management

- ✦ **Spacing of feeder:** Birds should not have travel more than 15 feet to reach a drinker or a feeder
- ✦ Reduced availability of feeding and drinking space may result in bird competition which may impact growth, increase flock variability, injuries and stress
- ✦ **Feed ingredients:** Free from - mycotoxins, pesticides, toxic metabolites, heavy metals, bacterial contamination and adulterations.
- ✦ **Egg powder export:** Include only vegetable proteins
- ✦ **Uniform eggs production:** To fed quality and quantity feed






- ✦ **Broilers feeding:** Avoid an accumulation of excess adipose fat.
- ✦ **Feed additives:** Approved and within a permissible level.
- ✦ **Withdrawal period:** To avoid residual effects & should be maximum
- ✦ **PRODUCT SAFETY: FREE FROM**
Antibiotics residues
Mycotoxin residues
Pesticide residues
Heavy metals
Bacterial contamination

Feed additives - Gaining importance

- ✦ **Alternate to antibiotics:**
egg yolk immunoglobulins,
probiotics,
prebiotics,
eubiotics,
acidifiers and herbal preparations
- ✦ Garlic
- ✦ Colloidal silver not salt silver
- ✦ Grape seed extract
- ✦ Vitamin-C
- ✦ Antioxidants- E, Beta-carotene, Selenium

Water Management

- ✦ **Waterer arrangement**
- ✦ **Water sanitation:** Chlorine dioxide –
Non-toxic,
No residue
No resistant.

Housing management

- ✦ Farm location & design : Determines the locational and structural biosecurity.
- ✦ As far as possible, chicks, growers and layers must be located in different premises
- ✦ Boilers : All-in and all-out system should be followed.
- ✦ Poor housing maintenance can lead to management problems, particularly important at high stocking density
- ✦ Bird injuries is a welfare concern, more over when it can be prevented by properly maintaining the facilities

- ✦ Cage design : provides better spacing and comfort.
- ✦ Cage - Internal surface : smooth to avoid bruises and cracking of eggs.
- ✦ Layer floor spacing : 450cm² of floor space per bird
500cm² - unrestricted floor space per hen
- ✦ Rearing - cage- free roaming- confined

- ✦ Ventilation : Housing design must be aim at optimal cross, ridge and bottom ventilation.
 - Ammonia level should not exceed 10-25ppm
 - Litter moisture level(not exceed 35%),
 - Leads to -skin lesions, Brest blisters, hock and foot burns and stress hormones
- ✦ Lighting programme - minimum 4hrs dark for broilers and 7hrs for layers
- ✦ Manure disposal : safe & hygienic

Disease control management

Emerging diseases of economic importance with reference to international trade of poultry and poultry products are

- Avian influenza
- Newcastle disease
- Zoonotic Salmonellosis
- ✦ Clean environment: Reduce the infectious pressure in the production system
- ✦ Farm sanitization, traffic and vector control : integral part of best farm biosecurity measures.
- ✦ Vaccines and other medicaments: used approved items only.
- ✦ Flock profiling: periodically followed.

Post-harvest (Off farm) Approach

- ✦ Eggs should be periodical collected in a suitable tray and stored in a transit storage room.
- ✦ After harvesting of eggs from farms should be exported as early as possible.
- ✦ Poultry processing plant should be underline with HACCP guidelines.
- ✦ Final products should be tested for internal and external quality
- ✦ Suitable and approved packaging materials should be used

Harvesting system

- ✦ Traceability is yet another food safety measure, followed in certain countries to trace back the farm from which it has originated by following barcoding procedures.





Transportation

- * Broilers after reaching a market weight should be harvested in a suitable well designed transport cage for slaughtering.
- * Freedom for movement
- * Absence of injury attributable facilities
- * Absence of distress during before and after loading






Welfare mandates

- * Inspections twice a day
- * Record keeping and documentation relating to health and welfare issues
- * Farm keepers – training and certificate
- * Data collection on slaughter houses on animal welfare indicators (mortality , foot pad lesions etc..)
- * Annual report



Welfare mandates

- * International standards
- * Country legalization
- * Quality assurance programmes
- * Effective compliance and enforcement



Thank you

Worldwide trade in eggs and egg products

Peter van Horne
Poultry Economist
 Agricultural Economics Research Institute (LEI)
 Wageningen-University and Research Center (WUR)
 The Netherlands

Pune, January 2010



Content

- Part 1:
 Changing pattern in production
 International trade in eggs / egg products
- Part 2:
 Future 2015 (prof. Windhorst)
- Discussion

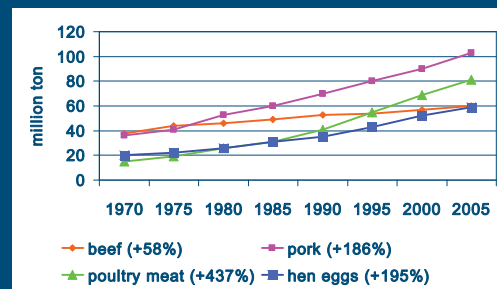


Part 1

Changing pattern in production:
Eggs

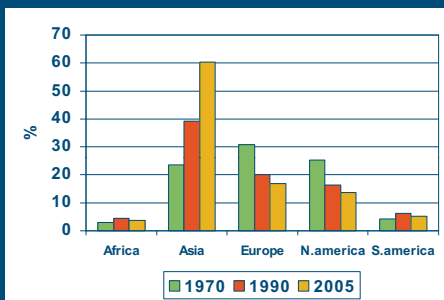


Development global meat and egg production



Data FAO

Contribution of the continents (in %) to global egg production



Data FAO

Leading hen egg producing countries in 2007

(data in 1,000 t, source FAO, update august 2009)

Country	2006	2007	% world	'07/'06 (%)
China	20.935	21.830	37.0	+ 4,3
USA	5.360	5.308	9.0	- 1.0
India	2.604	2.670	4.5	+ 2.5
Japan	2.497	2.525	4.3	+ 1.1
Mexico	2.290	2.291	3.9	+ 0.0
Rus Fed.	2.100	2.103	3.6	+ 0.2
Brazil	1.760	1.779	3.0	+ 1.1
Indonesia	1.011	1.174	2.0	+16.2
World	57.604	58.961		+ 2.3



China 2007 = 1300 mln layers

Trade



I.

Global and regional development
of egg trade

The leading hen egg exporting countries

Country	Exports (t)	Share (%)
Netherlands	267,422	22.9
Malaysia	127,343	10.9
Spain	102,762	8.8
Germany	95,852	8.2
China	80,564	6.9
Belgium	76,665	6.5
USA	73,775	6.3
India	58,744	5.0

Data FAO, 2005

The leading hen egg importing countries

Country	Imports (t)	Share (%)
Germany	273,196	24.3
China	92,417	8.2
Netherlands	88,169	7.8
France	82,897	7.4
Singapore	54,686	4.8
Belgium	42,300	3.8
Canada	39,877	3.5
Un. Kingdom	37,712	3.4

Data FAO, 2005

Main trade flows in hen eggs

Main trade flow (> 100,000 ton):

Netherlands → Germany
Malaysia → Singapore

Minor trade flows (20-50,000 ton):

Spain → France / Germany
Netherlands → Belgium / UK
Poland → Germany
India → UAE
USA → China / Hong Kong
Belarus → Russia



GENERAL CONCLUSION: mainly neighbour to neighbour

USA Exports of eggs in 2007

(data in mln pieces, source USDA, FAS)

Country	Export (mln pieces)	Export (% vol)	
Canada	391	24	23,500 ton
China	351	21	21,000 ton
Mexico	124	8	7,500 ton

EU Eggs Imports (egg equivalent, DG Agri, 2009)

EU Imports of Eggs : Trade figures (COMEXT – tonnes egg eq)

Origins	2005		2006		2007		2008	
	tonnes	%	tonnes	%	tonnes	%	tonnes	%
Argentina	7 595	23.5%	0 000	20.0%	0 310	17.4%	0 502	27.0%
USA	4 769	16.0%	8 505	21.8%	17 032	39.2%	4 245	21.7%
India	9 453	31.8%	12 730	32.7%	12 012	25.1%	6 617	25.9%
Mexico	2 168	7.3%	1 378	3.6%	1 762	3.7%	2 002	7.8%
Albania	0 0%	0.0%	95	0.2%	2 077	4.4%	2 209	8.6%
Israel	178	0.6%	898	2.3%	911	2.0%	656	2.7%
Brazil	1 140	3.8%	770	2.0%	30	0.1%	64	0.3%
Canada	2 091	7.0%	1 540	4.0%	796	2.6%	1	0.0%
EU27	29 742	100.0%	39 950	100.0%	44 724	100.0%	23 271	100.0%
% change			+31%		+15%		-48%	

EU Eggs Exports (egg equivalent, DG Agri, 2009)

EU Exports of Eggs : Trade figures (COMEXT - tonnes egg equiv.)

Destination	2004	2005	2006	2007	2008	2009				
	tonnes	%	tonnes	%	tonnes	%				
Japan	68 811	33.1%	61 526	25.0%	49 263	24.4%	50 988	26.2%	61 183	28.1%
Switzerland	32 045	16.2%	30 946	13.7%	30 790	15.7%	45 558	22.7%	40 590	18.6%
Russia	7 770	3.8%	13 177	5.7%	14 875	7.4%	14 818	7.4%	14 543	6.7%
U.S. States	1 222	0.6%	1 172	0.5%	5 527	2.7%	6 012	3.0%	10 031	4.5%
Libya	8 777	4.3%	8 288	3.7%	9 835	4.9%	8 208	4.1%	7 288	3.3%
Iran	493	0.2%	2 896	1.2%	2 590	1.3%	4 649	2.4%	6 008	2.7%
Turkey	5 747	2.8%	6 904	2.9%	6 353	3.1%	6 279	3.2%	6 233	2.8%
Taiwan	4 306	2.1%	3 823	1.6%	3 163	1.6%	4 407	2.3%	4 424	2.0%
Angola	4 092	2.0%	5 525	2.3%	4 401	2.2%	3 186	1.7%	4 048	1.9%
Norway	485	0.2%	1 396	0.7%	2 557	1.3%	3 071	1.6%	2 017	0.9%
South Korea	1 572	0.8%	2 664	1.1%	2 567	1.3%	2 625	1.3%	1 859	0.8%
EU28 EU27 EU25 EU12	197 884	100%	197 755	100%	202 122	100%	190 405	96%	213 317	100%
% change			-0%		+2%		-6%		+11.9%	

Regional trade in shell eggs



Conclusions 1: production and trade

- Europe and also North America lose market shares. China is by far the largest producer (40%) of eggs in the world.
- About 2% of eggs reaches the world market. To compare: in poultry meat 12%
- Production and trade in eggs is much more regional concentrated (compared to poultry meat with global trade flows from Brazil and USA).

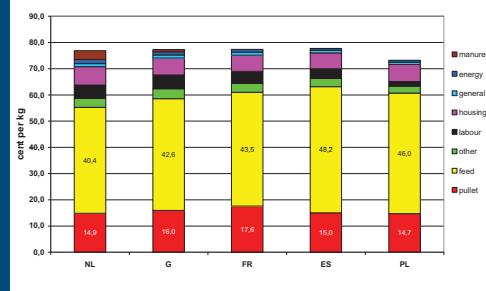
Conclusions 2: 2007/2008 developments (IEC)

- Recent growth in China (+4%), India (+2.5%) and Indonesia
- Main exporters are EU, China, USA, Malaysia and India
- EU self-sufficiency rate stable at 102%
- End 2008 and beginning 2009 fluctuations in exchange rate → impact on international trade

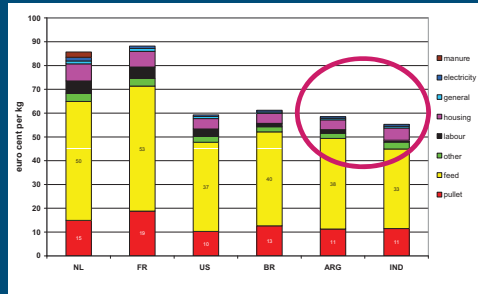
Part 2: International Competition



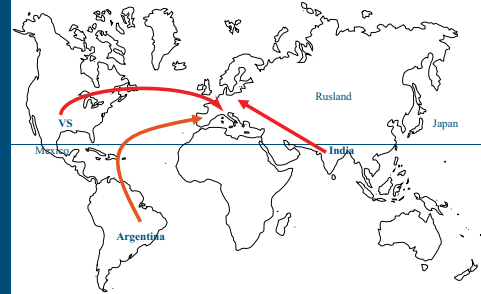
Production cost Eggs in 2007 EU countries, Farm level (Ect/kg)



Production cost Eggs in 2008 outside EU, Farm level (Ect/kg)



International trade in eggs and egg products



Regulations in the EU

- Animal Welfare
- Environment
- Food safety



EU Import levies on eggs and egg products

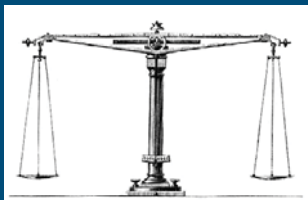
* WTO agreement ?

Doha round:
EU proposal to reduce import levies

* No agreement WTO



Free trade



Increase in production cost in EU due to public concern

Lower import levies

Imbalance



Conclusions 1

- Difference in production cost EU and India will further increase after 2012.
- WTO agreement could lower import levy.
- Status of Free trade agreement EU – India (starts again next week)

Conclusions 2

- Growing market for non cage eggs products
- Barn eggs: even higher advantage for India
 - Higher feed intake; lower feed cost
 - More m² poultry house; lower housing cost
 - Higher labour input; low worker cost
- However, more management skills and better stockmanship needed (floor eggs, diseases etc)

Part 3: Projections 2015

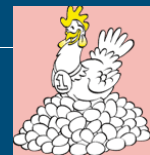
A projection of the regional Development of Egg production until 2015

Hans Wilhelm Windhorst
ISPA Institute, Vechta in Germany

IEC Statistical Analyst

London, 2008

Factors



- Natural population
- Age structure of the population
- Urbanisation of a society
- Development of the gross national income
- These parameters + development 1995-2005

Projected population development between 2005 and 2015 in the ten largest countries (in million)

country	2005	2015	Change	Change (%)
China	1313	1389	76	5.8
India	1134	1306	172	15.2
USA	300	329	29	9.7
Indonesia	226	252	26	11.5
Brazil	187	210	23	12.3
Pakistan	158	191	33	20.9
Bangladesh	153	180	27	17.6
Nigeria	141	176	35	24.8
Russia	144	136	-8	-5.6
Japan	128	127	-1	-0.8
10 countries	3884	4296	412	10.6

Projected development of egg consumption (kg/person/year)

continent	2005	2015	Change
Africa	2.4	3.2	0.8
Asia	9.1	10.0	0.9
Europe	13.4	13.9	0.5
N.America	15.0	15.3	0.3
S.America	10.2	11.2	1.0
Oceania	7.0	7.9	0.9
World	9.1	9.8	0.7

Projected additional egg demand in 2015 (1.000 ton)

continent	Population change (mill.) 2005-2015	Estimated per capita consumption in kg (2015)	Additional demand (1000 t)
Africa	227	3.2	1,480
Asia	451	10.0	8,075
Europe	-4	13.9	312
N.America	32	15.3	766
S.America	70	11.2	1,314
Oceania	4	7.9	60
World	780	9.8	12,007

Projected development of global hen egg production between 2005 and 2015

continent	Production (1000 t)	Per capita consumption (kg)	Production (1000 t)	Per capita consumption (kg)
Africa	2,203	2.4	3,683	3.2
Asia	35,917	9.1	43,992	10.0
Europe	9,823	13.4	10,135	13.9
N.America	4,985	15.0	5,751	15.3
S.America	5,711	10.2	7,024	11.2
Oceania	232	7.0	292	7.9
World	58,871	9.1	70,877	9.8

Conclusions projections 2015

- Egg production will increase from 58.8 to 70.9 million ton between 2005 and 2015 (+20% is 650 mln layers)
- Egg demand will increase faster in less developed than in more developed countries
- 67% of the additional demand of 12 million ton in 2015 will arise in Asia
- The highest additional demand show China (6 mill. t.), India (1.2m), USA (0.6 m), Brazil (0.4 m) and Indonesia (0.4 m).
- Egg demand will decrease only in very few countries (Hungary, Greece, Japan).

Discussion projections 2015

- Introduction and dissemination of HPAI
 - Increasing feed cost (supported boom in bio energy) and impact on egg prices
 - Impact of government policy (e.g Ban on conventional cages in EU).
 - WTO agreement: free trade on egg products with shift to low cost countries.
- In EU: High governmental impact on future developments in eggs sector (housing systems vs import tariffs).

Thanks for your attention



peter.vanhorne@wur.nl

Approval, Certification and Monitoring protocols for egg powder export



Dr. Amit Sharma
Assistant Director
Export Inspection Agency Mumbai
21.01.10

International Trends in egg powder Regulations



- Increasing focus on residues
- Shift from end-product inspection & testing to systems approach – GMP/GHP/HACCP
- Risk – based approach
- Transparency & Harmonization
- Primary production - Implementation of GAP/GVP in farms

International Trend in Food Regulation



- Animal Health aspects – disease status important
- Traceability requirements - Ability of a food to follow movements of a food through specified stage (s) of production, processing and distribution
- Conformity Assessment aspects – test methods becoming increasingly highly sensitive & newer & latest equipment/ methods being developed
- Equivalence/ Mutual Recognition Agreements

Developments in Importing Countries



- USA - Action Plan for import safety – 3 principles: prevention (prevent harm), intervention (intervene when risks identified), response (respond rapidly after harm occurred)
- Create new & strengthen existing safety standards including appropriate supply chain controls
- Posting inspectors in foreign ports
- Strengthen penalties strong enforcement action
- Product safety-imp principle in diplomatic relationship with foreign countries
- Australia – Biosecurity Australia initiatives on IRA (import risk analysis) – testing viruses at importing end/ geographical freedom
- Japan – pesticide residues

Developments in Importing Countries



- EC – regulations on safety & hygiene – food & feed hygiene, standards, animal health, welfare
- General food Law (178/2002)
- Hygiene of foodstuffs (852/2004)
- Hygiene of foods of animal origin (853/2004)
- Official Control for feed & food (882/2004)
- Official Control for food of animal origin (854/2004)
- Microbiological criteria for foods (2073/2005)
- Important points covered: risk-based, safety requirements, withdrawal & recall, traceability, rapid alert system, hygiene & HACCP requirements, registration & approval of premises, import controls, health certificates based on attestations by exporting countries, National residue plans (RMPs), precautionary principles (pr default limits)

- The importance of QC for exports recognized as early as 1963 & Govt enacted the Export (QC&I) Act, 1963 – an umbrella Act governing quality of exports

EIC set up to advise Government on measures for sound development of exports through QC&I and draw up progs for QC & inspection of commodities.

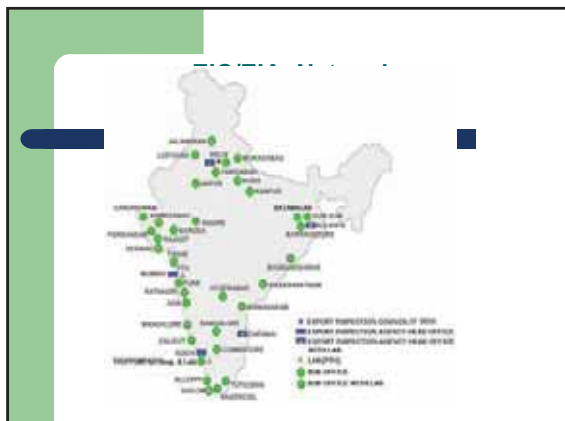
- More than 1000 commodities notified under different disciplines including food & agriculture, engineering, chemicals, jute, footwear, etc



- Egg products have been brought under **mandatory export certification** vide GOI Order and **Notification S.O. 2077 and S.O 2078 both dated 4.8.1997**
- On the basis of which the establishments processing egg products meant for export are being **approved by the Competent Authority** (Export Inspection Agencies established under Section 7 of the Export (Quality Control and Inspection) Act, 1963). Vide amendment order S.O.1442 (E) dated 19.12.2003
- Limits for **antibiotics, organochlorine compounds and pyrethroids** have been specified while the use of certain **antibiotics and other pharmacologically active substances** in manufacture of **feed, medication** of chicken and poultry or at any stage of production of egg powder have been **prohibited**.



EIC – PRESENT ROLE



- The instructions have been framed to lay down procedures for approval and surveillance of units
- The instructions, in addition to the requirements of the GOI order and notification also taking into consideration the requirements given in Regulation (EC) No. 178/2002, Regulation (EC) No. 852/2004, Regulation (EC) No. 853/2004, Regulation (EC) No.2073/2005, Directive 96/23/EC and Commission Decision 2006/696/EC.

PROCEDURE FOR APPROVAL OF ESTABLISHMENT



- HACCP Manual** (including the Sanitary Standard Operating Procedures, process flow chart (s) with product description, manufacturing details in each step , Self-Residue Monitoring Plan.)
- In the case of establishments meant for export to the EU, attested/certified copy of test report from EIA lab/EIC approved lab in respect of **water** complying with EC directive No.98/83/EC dated 3.11.1998 used during processing activities.(countries other than EU- **IS: 4251** (other than radiological parameters)
- Location and Layout plan** of the establishment (site plan and building plan), showing all infrastructure and equipment facilities.



PROCEDURE FOR APPROVAL OF ESTABLISHMENT

- Layout showing the **process/product flow, personnel flow, water flow** (Indicating serially numbered water taps) and effluent flow, in evidence of meeting food safety requirements
- Attested/ Certified copies of documents proving **legal identity** of the applicant establishment and scope of their operations.
- Attested/ Certified copy of **lease agreement** for the premises and building, where ever necessary.



- g. List of **identified layer farms** meeting the minimum requirements from which the establishment intend to procure eggs for processing along with details like address, and distance from the processing establishment.
- h. Bio-data of the technologist(s)
- i. An Undertaking and Guarantee
- j. Attested/ Certified copy of consent letter issued by Pollution Control Board concerned.
- k. Attested/ Certified copy of the order allotting IEC number.



3-TIER SURVEILLANCE SYSTEM

- **MONITORING BY EIA OFFICIALS TO VERIFY**
 - Sanitation & Hygiene
 - Process controls
 - Implementation of HACCP plan
 - Records
 - Observe testing by laboratories
 - Draw samples of raw materials, water, ice, finished products, swabs of workers hands and work places



3-TIER SURVEILLANCE SYSTEM

Supervisory Visits

Corporate audit



GENERAL HYGIENE PROVISIONS FOR PRIMARY PRODUCTION AND ASSOCIATED OPERATIONS

I. Hygiene provisions

1. Food business operators are to ensure that **shell eggs are protected against contamination**, having regard to any processing that shell eggs will subsequently undergo.
2. Notwithstanding the general duty laid down above, food business operators are to **comply with appropriate importing countries and national legislative provisions** relating to the control of hazards in primary production and associated operations, including:
 - (a) measures to **control contamination arising from the air, soil, water, feed, fertilizers, veterinary medicinal products, and biocides** and the **storage, handling and disposal of waste**; and
 - (b) measures relating to **animal health and welfare** that have implications for human health, including programmes for the **monitoring and control of zoonoses and zoonotic agents**.



Hygiene provisions

3. Food business operators producing poultry shell eggs are to take adequate measures, as appropriate:
 - (a) to keep any **facilities** used in connection with primary production and associated operations, including facilities used to store and handle feed, **clean** and, where necessary after cleaning, to **disinfect** them in an appropriate manner;
 - (b) to keep **clean** and, where necessary after cleaning, to **disinfect**, in an appropriate manner, **equipment, containers, crates, vehicles and vessels**;
 - (c) as far as possible to ensure the cleanliness of poultry;



Hygiene provisions

- (d) to use **potable water**, or clean water, whenever necessary to prevent contamination;
- (e) to ensure that **staff handling foodstuffs are in good health** and undergo training on health risks;
- (f) as far as possible to **prevent animals and pests from causing contamination**;
- (g) to store and **handle waste and hazardous substances** so as to prevent contamination;

Hygiene provisions



- (h) to **prevent** the introduction and spread of **contagious diseases transmissible to humans through food**, including by taking precautionary measures when introducing new animals and reporting suspected outbreaks of such diseases to the competent authority;
- (i) to take account of the results of any relevant analyses carried out on samples taken from animals or other samples that have importance to human health; and
- (j) to use **feed additives** and **veterinary medicinal products** correctly, as required by the relevant legislation.

Hygiene provisions



- 4. Food business operators are to take appropriate **remedial action** when informed of **problems** identified during **official controls**.

II. Record-keeping



5. Food business operators are to keep and retain records relating to measures put in place to control hazards in an appropriate manner and for an appropriate period, commensurate with the nature and size of the food business.
6. Food business operators producing poultry shell eggs are, in particular, to keep records on:
 - (a) the **nature and origin of feed** fed to the animals;
 - (b) **veterinary medicinal products** or other treatments administered to the animals, dates of administration and **withdrawal periods**;

- (c) the **occurrence of diseases** that may affect the safety of products of animal origin;
- (d) the **results of any analyses** carried out on samples taken from animals or other samples taken for diagnostic purposes, that have importance for human health; and
- (e) any relevant reports on checks carried out on animals or products of animal origin.

REQUIREMENTS FOR APPROVAL OF ESTABLISHMENT FOR PROCESSING EGG PRODUCTS FOR EXPORT



1. Surroundings

- 1.1 The premises shall be kept clean and shall have defined curtilage. All the roads in the premises shall be concreted / tarred or turfed to prevent wind blown dust.
- 1.2 There shall not be any swamps, stagnant water or signs of any rodent harbourage inside the premises.
- 1.3 The surroundings shall be reasonably free from objectionable odours, smokes, dust and other contaminants.

2. Constructions and Layout



- 2.1 Immediate surrounding - tarred/ concreted to prevent contamination from the surroundings.
 - 2.2 The design and layout shall be such as to preclude contamination.
 - 2.3 The lay out of different sections - smooth and orderly flow of work - prevent possible cross contamination and backtracking.
- All the egg products handling areas shall be separate from areas used for residential purpose.

Constructions and Layout



- 2.4 There shall be adequate lighting and ventilation and light fixtures shall be protected with proper covering.
- 2.5 The layout shall ensure sufficient space in different sections for machinery, equipment, personnel etc. without congestion.
- 2.6 The building shall provide sufficient protection against the entry and harbourage of rodent, insects, birds, other animals etc.

Constructions and Layout



- 2.7 All the **entry points** shall have suitable **air curtains** or other suitable arrangements to prevent the entry of flies.
- 2.8 **Wood** shall not be used in the factory, **except inside the cold storage.**
- 2.9 **Non-operative areas** inside the establishment shall be properly cordoned off to avoid possible cross contamination.

3. Egg receiving section



- 3.1 There shall be a **raised platform** for receiving the material and the sides and roof of the platform shall be sufficiently protected from extraneous contamination.

4 Workers entry points



- 4.1 Suitable **washing and sanitizing facilities** for feet and hands shall be provided at the entry points.
- 4.2 The washbasins shall be provided with **foot operable taps** or **non-hand operable taps.**
- 4.3 Liquid soaps, disinfectants, nailbrushes, single use towels / hand dryers etc. shall be provided in sufficient quantities at all entry points.
- 4.4 **Waste bins** provided for collecting used towels shall be of **foot-operated type.**

5. Ceiling, walls and floors



- 5.1 The **floor** of the processing areas shall be **smooth, impermeable** and **easy to clean** and **disinfect.** There shall be **no water stagnation** on the floor. The floor shall have sufficient **slope opposite to the flow of work** or side ways.
- 5.2 The **wall to floor and wall-to-wall junctions** shall be **rounded off** to facilitate easy cleaning.
- 5.3 The walls should be durable, smooth, light coloured and easy to clean and disinfect.

Ceiling, walls and floors



- 5.4 The walls should not have projections and the entire fitting on the wall shall be made in such a way so as to clean and disinfect them easily. If possible, the electric switches or other fittings shall be fixed in other areas where no handling of egg product is carried out.
- 5.5 The ceiling shall be free from cracks and open joints and shall be smooth and easy to clean.
- 5.6 If structural elements or fittings are suspended below the ceiling, suitable protection shall be given to prevent falling of debris, dust or droppings.

6. Doors, windows and ventilators



- 6.1 Doors -Tight fitting and the windows and ventilators shall have fly proofing nets to prevent the entry of flies.
- 6.2 All doors and windows shall be **durable** and made of **corrosion resistant material** and windowsills, if any, shall **slope inwards**. The windows/ ventilators shall be constructed at least **one meter above the floor**.

Doors, windows and ventilators



- 6.3 The doors - **self-closing type** .
- 6.4 **Mechanical ventilation/ exhaust fans** shall be provided in areas where stagnation of air, condensation of fluid etc. are present
- 6.5 The **opening of ventilation/ exhaust fan** shall be provided with suitable **fly proofing** system.

- **Drainage**
- **Change rooms and toilets**
- **Store rooms**
- **Water**
- **Personal Hygiene**



COMPLIANTS PROCEDURE



- Complaints received- By Unit/ EIC
- Unit placed **on Alert** (inc monitoring- twice a month)
- In case the situation is due to **in-process contamination**:
 - a) **pathogens**,
 - b) **permitted pharmacological substances**
 - c) other permitted substances (such as **Phosphates, antioxidants**) above the permissible level,
 - d) the situation is due to **environmental contamination - dioxin, pesticides**
 - e) use of **prohibited pharmacological substances** (Chloramphenicol, Nitrofurans)

NEXT 10 CONSIGNMENTS TESTED

COMPLAINT ADDRESSING SYSTEM



- In case of rejection due to failure in quality parameters, next ten consignments are inspected for organoleptic factors, microbiological factors and lactic acid content.
- The inspected consignments shall be allowed for export to EU or Non-EU, only after satisfactory test results of the EIA-laboratory or EIC approved laboratory for the specific parameter(s).

COMPLIANTS PROCEDURE



- Investigation – visit to unit/information from processor
- Satisfactory – ‘on alert’ continues
- Unsatisfactory – consignments contaminated/unsatisfactory hygienic conditions/samples fail
 - Production & export stopped till corrective actions taken
 - Show cause why approval not withdrawn

COMPLIANTS PROCEDURE



- Corrective actions taken and verified
 - Satisfactory; resume production and exports
 - 10 consignments tested
 - If unsatisfactory, then approval withdrawn
- Procedure for dealing with returned consignments- testing
 - batch wise testing (if requested)

RESIDUE MONITORING PLAN



- Self RMP
- National Residue Control Programme

LIST OF PESTICIDES AND DRUGS FOR MONITORING RESIDUE

No. No.	Chemical Name	MPR No.	Status
1.1	Abamectin	10000000000000000000	Approved
1.2	Acetamiprid	10000000000000000000	Approved
1.3	Adiantum	10000000000000000000	Approved
1.4	Azinphos methyl	10000000000000000000	Approved
1.5	Bifenthrin	10000000000000000000	Approved
1.6	Chlorpyrifos	10000000000000000000	Approved
1.7	Cyfluthrin	10000000000000000000	Approved
1.8	Cypermethrin	10000000000000000000	Approved
1.9	Deltamethrin	10000000000000000000	Approved
1.10	Emamectin benzoate	10000000000000000000	Approved
1.11	Fluralaner	10000000000000000000	Approved
1.12	Gamma HCH	10000000000000000000	Approved
1.13	Imidacloprid	10000000000000000000	Approved
1.14	Lambda cyhalothrin	10000000000000000000	Approved
1.15	Permethrin	10000000000000000000	Approved
1.16	Phosalone	10000000000000000000	Approved
1.17	Propoxur	10000000000000000000	Approved
1.18	Spinetoram	10000000000000000000	Approved
1.19	Thiamethoxam	10000000000000000000	Approved
1.20	Triazophos	10000000000000000000	Approved
1.21	Triphenylethylene	10000000000000000000	Approved
1.22	Triphenylethylene	10000000000000000000	Approved
1.23	Triphenylethylene	10000000000000000000	Approved
1.24	Triphenylethylene	10000000000000000000	Approved
1.25	Triphenylethylene	10000000000000000000	Approved
1.26	Triphenylethylene	10000000000000000000	Approved
1.27	Triphenylethylene	10000000000000000000	Approved
1.28	Triphenylethylene	10000000000000000000	Approved
1.29	Triphenylethylene	10000000000000000000	Approved
1.30	Triphenylethylene	10000000000000000000	Approved
1.31	Triphenylethylene	10000000000000000000	Approved
1.32	Triphenylethylene	10000000000000000000	Approved
1.33	Triphenylethylene	10000000000000000000	Approved
1.34	Triphenylethylene	10000000000000000000	Approved
1.35	Triphenylethylene	10000000000000000000	Approved
1.36	Triphenylethylene	10000000000000000000	Approved
1.37	Triphenylethylene	10000000000000000000	Approved
1.38	Triphenylethylene	10000000000000000000	Approved
1.39	Triphenylethylene	10000000000000000000	Approved
1.40	Triphenylethylene	10000000000000000000	Approved
1.41	Triphenylethylene	10000000000000000000	Approved
1.42	Triphenylethylene	10000000000000000000	Approved
1.43	Triphenylethylene	10000000000000000000	Approved
1.44	Triphenylethylene	10000000000000000000	Approved
1.45	Triphenylethylene	10000000000000000000	Approved
1.46	Triphenylethylene	10000000000000000000	Approved
1.47	Triphenylethylene	10000000000000000000	Approved
1.48	Triphenylethylene	10000000000000000000	Approved
1.49	Triphenylethylene	10000000000000000000	Approved
1.50	Triphenylethylene	10000000000000000000	Approved

Recent visits by International Regulatory bodies



- Visit of FVO mission- Sept. 2009
- Visit by AQIS, Australia- January, 2010

THANK YOU



INTRODUCTION

- EGG POWDER EXPORTS FROM OUR COUNTRY HAS STABILISED AT 15000 TONS PER ANNUM
- IN ORDER TO DOUBLE THIS QUANTITY IN THE NEXT FIVE YEARS CONSTRAINTS WHICH WE ARE FACING HAS TO BE OVERCOME
- THIS PRESENTATION TRIES TO ADDRESS SOME OF THE CONSTRAINTS AND HOW TO OVERCOME THEM.

RESIDUES(PESTICIDE&ANTIBIOTIC)

- COUNTRIES IN EU & JAPAN HAVE ENFORCED STRICT REGULATIONS AND ARE UPDATING THEM FROM TIME TO TIME REGARDING MRL s.
- PESTICIDE RESIDUES AND ANTI BIOTIC RESIDUES ARE CONSIDERED AS ONE OF THE VITAL QUALITY PARAMETERS FOR EGG POWDERS.
- IN INDIA LOT OF PESTICIDES ARE STILL BEING USED BY POULTRY SECTOR WHICH ARE BANNED BY EU & JAPAN FOR CONTROLLING INSECTS.
- SIMILARLY ANTIBIOTICS LIKE NITROFURANS WHICH ARE GENERALLY USED IN POULTRY UNDER THE GUISE OF GROWTH PROMOTERS ARE BANNED IN EU & JAPAN

RESIDUES -CONTD

- IN ORDER TO ALLEVIATE THIS PROBLEM IT IS NECESSARY TO CREATE AN AWARENESS AMONG THE POULTRY FARMERS ABOUT THE USAGE OF SUCH BANNED ITEMS.
- IF GOVERNMENT CAN TAKE STEPS IN BANNING THE MANUFACTURE OF SUCH ITEMS IT WILL HELP IN MINIMISING THE RISK OF RESIDUES IN THE EGG POWDER.
- MOREOVER AWARENESS HAS ALSO TO BE CREATED ON THE PRESENCE OF DIOXIN, MELAMINE AND OTHER BANNED SUBSTANCES FROM ENTERING THE EGGS.
- THIS CAN BE ACHIEVED BY CONDUCTING SEMINARS FOR THE POULTRY FARMERS BY GOVERNMENTAL AGENCIES LIKE EIA & APEDA.

CREATION OF ESTABLISHMENTS

- BIRDFLU HAS BEEN AFFECTING IN DIFFERENT PARTS OF OUR COUNTRY. ONCE IT AFFECTS SOME REMOTE PART OF THE COUNTRY, EXPORTS GET AFFECTED IMMEDIATELY.
- WESTERN COUNTRIES ARE SMALLER AND HENCE CONTROLLING IS EASIER. MOREOVER THEY HAVE COMPARTMENTS WHICH MAKES THEM EASIER TO ISOLATE AND TAKE ACTION.
- IN OUR COUNTRY BOTH ZONING AND COMPARTMENTALISATION OF POULTRY FARMS ARE NOT POSSIBLE. HENCE GOVERNMENT SHOULD INITIATE STEPS TO BRING IN THE CONCEPT OF DISEASE FREE ESTABLISHMENTS

ESTABLISHMENTS-CONTD

- BY BRINGING IN THE CONCEPT OF DISEASE FREE ESTABLISHMENTS EGGS SUPPLIED FROM THESE ESTABLISHMENTS CAN BE DECLARED FREE FROM BIRDFLU AND EXPORTS WILL NOT BE AFFECTED.
- ONCE THESE ESTABLISHMENTS ARE CREATED WITH CONTINUOUS SURVEILLANCE GOVERNMENT CAN CONTROL OR PREVENT THE OUTBREAK OF DISEASE.
- SUCH ESTABLISHMENTS CAN BE APPROVED BY THE IMPORTING COUNTRIES THROUGH EXPORT INSPECTION COUNCIL WHICH WILL ULTIMATELY BOOST THE EXPORTS

INCENTIVES

- INCENTIVES ARE PRESENTLY BEING GIVEN TO EXPORT ORIENTED UNITS ON THE FOB VALUE OF THEIR EXPORTS
- IN ORDER TO PROMOTE EGG AND EGG PRODUCT EXPORTS, GOVERNMENT SHOULD AWARD INCENTIVES TO THOSE FARMERS WHO ARE SUPPLYING EGGS TO EGG POWDER MANUFACTURING UNITS
- THIS WILL HELP THE FARMER IN MAINTAINING STRICTER CONTROLS IN THE PRODUCTION OF RESIDUE FREE EGGS

NECC – PROJECTIONS FOR 2015

- THE NATIONAL EGG COORDINATION COMMITTEE PROJECTED A POULTRY PLAN FOR YEAR 2015, KEEPING IN VIEW THE TARGET OF 180 EGGS AND 9 KG CHICKEN MEAT. PER CAPITA ANNUAL CONSUMPTION AND CONSIDERING AN AVERAGE GROWTH OF 10 % AND 15% FOR EGG AND BROILER INDUSTRY RESPECTIVELY. FOR THIS PURPOSE THE COUNTRY WOULD NEED A CAPITAL INVESTMENT OF ABOUT RS.148000 MILLION

NECC – PRICING FACTOR

- NECC DECLARES PRICES OF EGGS THRICE A WEEK IN VARIOUS ZONES IN OUR COUNTRY. THIS PRICE FIXATION WAS DONE WITH A VIEW TO MAINTAIN DEMAND SUPPLY RATIO.
- NECC PRICE WAS CONSIDERED THE FARMGATE PRICE WITH SLIGHT DEVIATIONS. BUT NOW NECC PRICE HAS BECOME ONLY A REFERENCE PRICE AND FARMGATE PRICE IS HOVERING AT 30 TO 40 PAISE LESS THAN THE PRICE FIXED ON THAT DAY.
- THIS SCENARIO HAS LANDED THE FARMERS IN A LOSING BUSINESS PROPOSITION

NECC - CONTD

- DURING HIGH EGG PRICES, EGG PROCESSING INDUSTRIES SOMETIMES STOP PROCURING EGGS BECAUSE OF NON-VIABILITY.
- DURING THAT PERIOD THE POULTRY FARMER IS FORCED TO GO TO THE OPEN MARKET FOR SELLING THEIR EGGS AND THEY LOSE HEAVILY AS THE TRADERS EXPLOIT THE SITUATION.
- THIS SHOULD BE DEFTLY HANDLED IN SUCH A WAY THAT THE POULTRY FARMER DOES NOT LOSE, AT THE SAME TIME EGG PROCESSING INDUSTRIES ALSO SHOULD UNDERSTAND THE FARMERS PREDICAMENT.

FEED MANUFACTURE

- TWO MAJOR FEED INGREDIENTS REQUIRED FOR POULTRY FEEDS ARE MAIZE AND SOYBEAN MEAL . LARGE PORTION OF MAIZE IS NOW BEING DIVERTED TO OTHER INDUSTRIES LIKE MANUFACTURING OF STARCH, CORN FLAKES ETC. IMPORTATION OF MAIZE IS A SHORT TERM MEASURE.
- A LONG TERM PLAN AND CAMPAIGN ON "GROW MORE MAIZE" BACKED BY INCENTIVE PRICES FOR FARMERS IS REQUIRED. IN CASE OF SOYBEAN MEAL , PRICES FLUCTUATE DEPENDING UPON SUPPLY AND DEMAND POSITION FOR ITS EXPORTS . FORWARD TRADING IN THESE COMMODITIES TO BE RESTRICTED.
- MORE FEED ANALYTICAL LABORATORIES ARE REQUIRED FOR TESTING OF FEED INGREDIENTS AND COMPOUNDED FEED FOR "QUALITY" INCLUDING PRESENCE OF HARMFUL CONTAMINANTS AND PROBLEMS LIKE 'AFLOTOXIN' INFESTATION ETC.

SCOPE FOR INVESTORS

- DEMAND OF EGGS AND POULTRY MEAT ARE INCREASING.
- THE PURCHASING POWER OF PEOPLE HAS INCREASED
- THE 'QUALITY' OF PRODUCTS HAS TO BE IMPROVED.
- INDIA HAS TECHNICALLY QUALIFIED MANPOWER, A STRONG PRIVATE POULTRY SECTOR AND FINANCIAL CREDIT INSTITUTIONS.
- THERE IS A CONSIDERABLE SCOPE IN INVESTMENTS IN ALL ASPECTS OF POULTRY

SCOPE FOR INVESTORS

- PROCESSING AND MARKETING OF PRODUCTS BOTH FOR THE DOMESTIC AS WELL AS EXPORT MARKET.
- THE FOREIGN INVESTORS SHOULD SEEK COLLABORATIONS WITH INDIAN ENTREPRENEURS.
- THE FOREIGN RESEARCH AND DEVELOPMENT INSTITUTES NEED TO COLLABORATE WITH INDIAN COUNTERPARTS LIKE ICAR, CARL, AGRICULTURAL UNIVERSITIES ETC.
- THE INTERNATIONAL DONORS NEED TO COLLABORATE WITH GOVERNMENT OF INDIA, NABARD, APEDA ETC.