Concentration in the Poultry Sector

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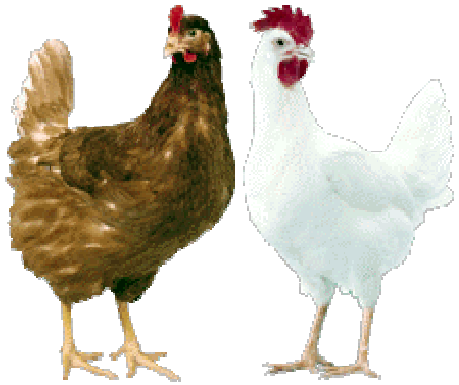
League for Pastoral Peoples and Endogenous Livestock Development

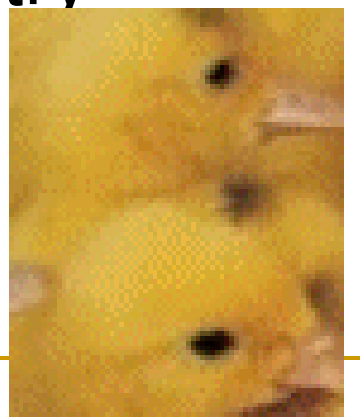

CHARLES STEWART DAY OLD CHICKS (LL) LTD
Hy-Line
BRAND
CHICKS
Cobb
BROILERS

Wherever you are in the world, you'll find the same type of chickens…….



- Hi-Line brown
- Hi-Line white

- Hi-line chicken were fist developed in the 1940s by Henry A. Wallace* in the U.S.
- Henry Wallace applied the same breeding methods that he had used to develop Pioneer Hi-bred corn to poultry.
- Within 10 years, all commercial poultry breeders bred hybrids.



*33rd Vice President of the United States (1941–45),

Genetic progress

- Modern broiler grow three times faster than 30 years ago and require less than half the feed.
- Egg numbers increased from less than 270 to 340 between 1950 and 1993. Feed efficiency improved by 32.4%
- But: incidence of skeletal problems has increased, as well as mortality due to stress (altitude, humidity, temperatures, etc.)

Industry Structure

Today, 74% of the world's poultry production is controlled by the "industry".

- Primary breeders
- Multipliers (cross the parents and send eggs to hatcheries)
- Hatcheries (supply one-day old chicken to egg and broiler producers)
- Producers (eggs or broilers)

Primary Breeders

- Primary Breeders - engineer development of the first three generations of birds which commercial growers ultimately market as fifth generation.
- They keep four inbred pure lines.
- They send the “parent animals” to multipliers, providing only male chicken of the male line and female chicken of the female to exclude possibility of breeding by the multipliers (“biological lock”).
- **Millions of day-old chicks are shipped around the globe.**

Number of primary breeders

	1989	2006
Layers	10	2
Broilers	11	4
Turkey	3	3?

Industrial Poultry Breeding

- There are separate breeding operations for broiler and layer hens.
  - Broilers: only male chicks raised (?)
  - Layers: Only female chicks raised.
  - Chicks of the unwanted sex are immediately destroyed after hatching.
  - Hybrid chicken are trade secrets.
  - Chicken rearers can not breed them, but continuously have to purchase new batches.

Multiplier Effect in Broilers

One pedigree male chicken generates
28,000,000 broilers or 800,000,000 of meat.

Erich Wesjohann Group

PHW-GRUPPE
LOHMANN & CO.AG

- controls 68% of white egg production, and 17% of brown egg production, with its subsidiaries Hi-Line, Lohmann Tierzucht and H&N International.
- In April, 2005, it acquired Aviagen, the world's leading poultry meat science company whose brands include Ross, Nicholas Turkey, Arbor Acres, L.I.R. and C.W.T.
- has a distribution network serving 250 customers in 85 countries.

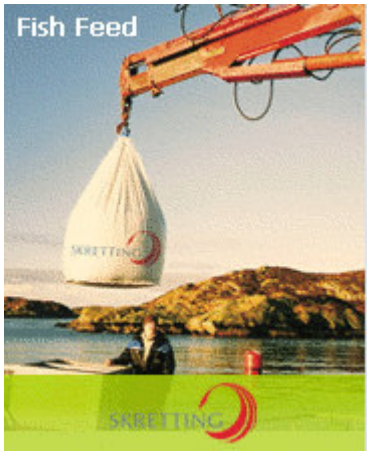
Hendrix Genetics

- Hendrix Genetics is owned and controlled by the Hendrix family and based in the Netherlands.
- Hendrix Genetics is producing ISA, Babcock, Shaver, Hisex, Bovans and Dekalb layer hybrids and controls 80% of the global brown egg and 32% of white egg production.

HENDRIX GENETICS
FOUNDERS OF FUTURE

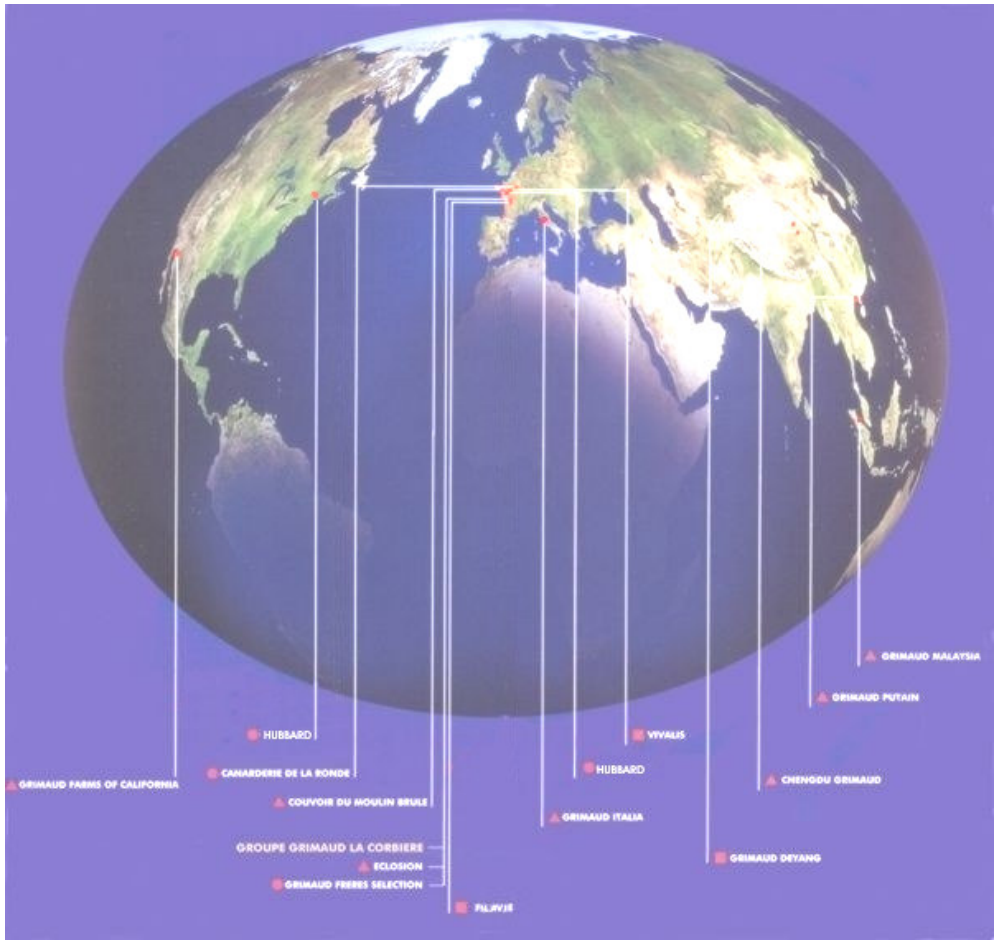
Nutreco Holding

- is an international animal nutrition and fish feed company, creating value through food chain expertise. Its breeding division Euribrid consists of three dedicated breeding companies, each focusing on its own species; broilers (Hybro), turkeys (Hybrid), pigs (Hypor), day-old chicks and hatching eggs (Plumex).
- Has tie-up with Hendrix Genetics



Grimaud Group

- Specialised in avian and rabbit breeding, and biotechnology to service health and agro-industry.
- Second largest player in avian genetics and the leader in specialty segments (coloured chickens, ducklings, guinea fowls, rabbits, pigeons).
- Located in the US, Europe (France, Italy, Poland, Netherlands) and Asia (China, Malaysia, Thailand)



Cobb

Is owned by Tyson Foods, the world's largest processor and marketer of chicken and red meat.

Consequence of consolidation:

- Dramatic reduction in the number of geneticists working for breeding firms and in the number of breeding populations under selection.
- US scientists have been ringing alarm bells about lack of public resources for maintaining research populations.
- Even within the industry there is concern about the extent that the genetic base has been reduced.

Insider comment:

"*There is also concern about the narrowness of the base of the genetic stock now being marketed. There is danger in this situation due to the potential susceptibility of 'monocultures' to new diseases that could destroy or damage a genetically uniform population, as happened with maize in the southern corn leaf blight epidemic on the US in 1970".* (Arthur and Albers, 2003)

Biosecurity is defined as, “the prevention (or control) of pathogenic microorganisms from contacting animal populations.” It is essentially keeping the bird separate from the bug. (Chris Morrow, company veterinarian, Aviagen)

Obstacles to breeding for disease resistance (according to industry insiders)

- Requires exposure to disease causing organisms in a controlled manner which can not normally be done in pedigreed populations because of risk.
- Disease causing organisms often evolve rapidly to more virulent forms
- An inverse relationship between resistance/tolerance and productivity has been noted.

Role of Genetic Engineering

- Since 1980s, genetic engineering of chicken has been feasible
- Production of transgenic birds common in laboratory chicken
- Public backlash feared in chicken used for food production
- Industry geneticists regard genetic engineering for disease resistance as desirable
- Since primary breeding is veiled by secrecy, who knows if g.e. is not practiced?

Conclusions

- Virtually all commercial poultry genetics worldwide are owned and controlled by only four companies, which have interests in aquaculture, vaccine and drug production.
- This is an entirely uncontrolled (or self-controlled?) sector to which nobody has access.

Open Questions

- What is the role of the poultry industry in the genesis of bird flu outbreaks (genetic monocultures) and bird flu spread (given the connections of the industry with aquaculture, fertilizer, etc.) ?

- Can we afford to protect the industry by eliminating smallholder poultry keeping?

- Can we afford to continue to let the sector control itself?

Thank you!