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## **A Proactive Approach To Product Quality And Food Safety**

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### **THE PROACTIVE APPROACH**

#### **Introduction:**

The world's food system is becoming more technically demanding. Our ultimate customer, the consumer, and every part of the turkey production chain are demanding safe, top quality products produced by responsible, reliable companies. HACCP (Hazard Analysis of Critical Control Points) and ISO are programs that were introduced to the food industry to formally address food safety and operational quality.

Both HACCP and ISO programs have been implemented at Hybrid to ensure we meet the needs of our customers. The turkey production chain "begins" with us as the primary breeder. We need to ensure that our products are profitable for our customers, but also safe.

Hybrid began the journey towards HACCP and ISO registration in 1997 and completed in November 2000. This process involved every employee at each location of the company. We are proud of this accomplishment, which represents Hybrid's dedication to excellence within the turkey industry.

This report briefly outlines Hybrid's HACCP and ISO programs.

#### **Why HACCP?**

Food safety has become an increasing concern for everyone connected to the food chain. HACCP was introduced to the food industry as a means of quality control that identifies and ensures proper management procedures are in place for key areas that relate directly to food safety. As a primary breeder our business focus is on the development of superior breeding stock, however, we also supply turkey for human consumption as a "by-product" of our breeding activities.

We feel it is important to do everything we can at the farm level to supply a safe food product to the processing plants. Also, Hybrid's customers are accomplishing HACCP registration, and we feel it is our responsibility, as an integral part of the food chain, to meet the same high standard of certification as our customers.

Therefore, Hybrid Turkeys has taken a proactive step and implemented the HACCP food safety program on all farms and hatcheries.

## **Why ISO?**

ISO is an internationally recognized standard that represents quality measurement, documentation, and standardization and revolves around continual improvement. The emphasis is on continual improvement, which makes ISO a natural fit with Hybrid's overall philosophies. ISO has been a valuable addition to Hybrid's standardized operational, sales and monitoring programs and ensures conformity of product and processes at all levels of the company.

## ROAD MAP TO HACCP REGISTRATION

### HACCP TEAM

A multi-disciplinary team was formed to represent all key areas of Hybrid's production system



### PRODUCT REVIEW

What is our product?  
What are the inputs to our product?  
What are the outputs from our product?  
Process flow diagram



### PREREQUISITE PROGRAM

A series of documented work procedures were developed. The documented work procedures review key quality steps, key food safety steps and also reviewed premises, transportation, pest control and disinfection, equipment and personnel



### HAZARD ANALYSIS

All possible hazards that can occur throughout the production process were listed and then using the Critical Control Point Decision Tree hazards were analyzed



### HACCP PLAN

For each Critical Control Point identified a plan is outlined on how to monitor the critical control point, what to do when deviations occur, how the monitoring is verified and how records must be kept



AUDITS BY AN INDEPENDENT REGISTRATION GROUP



### HACCP REGISTRATION

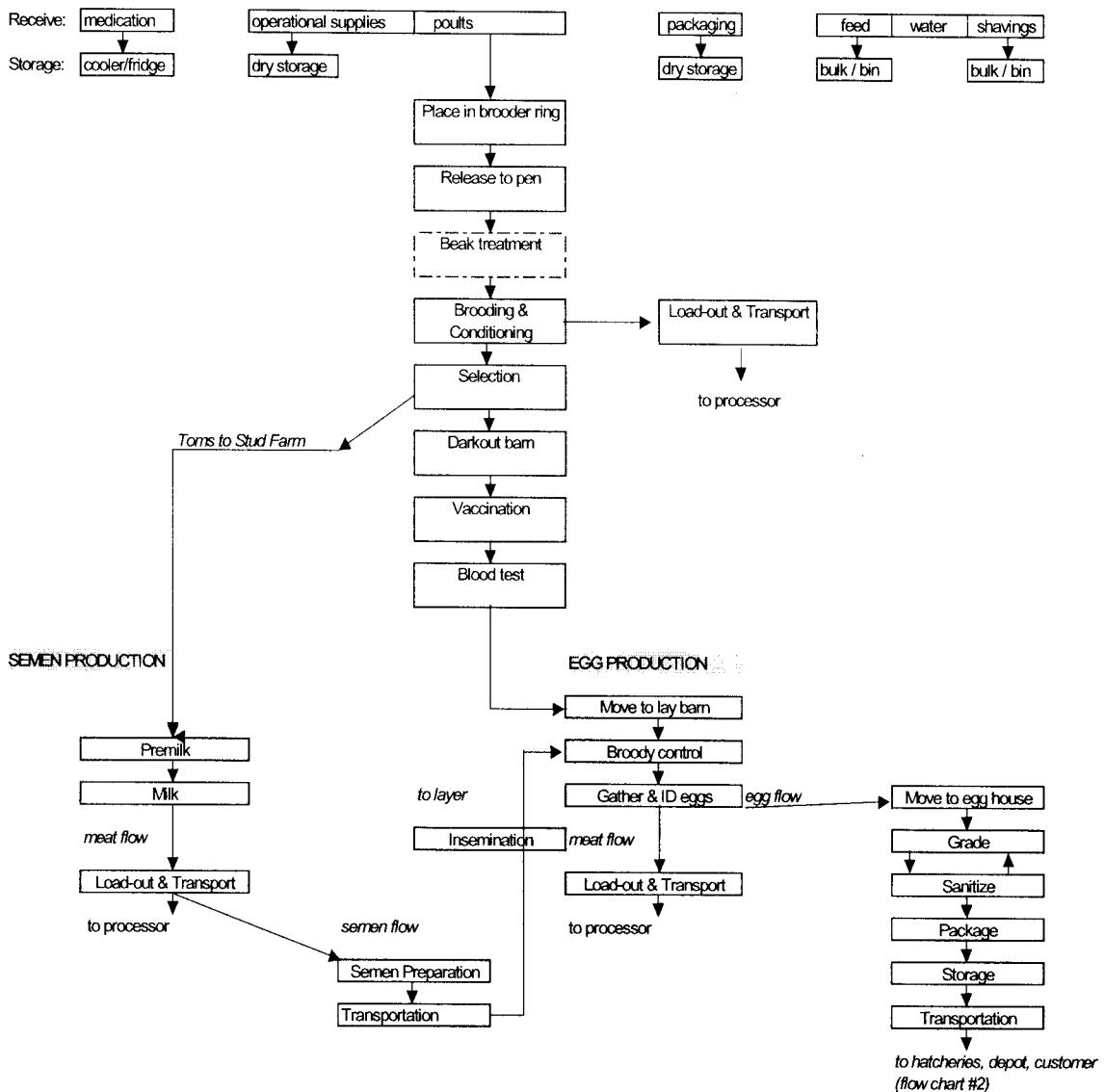
## HYBRID TURKEYS' APPROACH TO HACCP

In order to steer the projects for HACCP and ISO a lead team was formed. The team consisted of the Quality Project Coordinator, the Human Resources Manager and the Logistics Manager.

Prior to initiating the development of a "Prerequisite Program" and a HACCP plan we took the time to evaluate how our product moves through the hatchery and farm systems. System diagrams were created for both the farm and hatchery operational procedures.

**Figure #1: Example of Farm System Layout**

### FARM





Once a representative flow diagram of the farms and hatchery systems was established it was much easier to work on the development of a Prerequisite Program and the HACCP plan.

The Prerequisite Program is a series of procedures and work instructions that clearly define how key quality/food safety steps are completed throughout the production system. The aim of the Prerequisite Program is to provide an effective documented work instructions manual that is used as a training and reference tool. A strong Prerequisite Program reduces potential quality problems and also reduces the number of Critical Control Points for the HACCP plan.

## HAZARD ANALYSIS

After having formalized our existing guidelines into an Operational Manual for the farms and hatcheries it was time to begin the development of the actual HACCP plan.

The HACCP plan was derived from a hazard analysis of each step throughout the production of hatching eggs or rearing turkeys (note that in the HACCP plan, only hazards to human health are considered).

The following is an example of the hazard analysis that uses a standard decision tree for the questions 1,2,3 and 4 (see Critical Control Point Decision Tree):

Step	Potential Hazard	Potential Human Hazard	Q 1	Q 2	Q 3	Q 4	CCP #	Comment
Hatching egg storage	High temperatures	No						No human health hazard, no further analysis
	Low humidity	No						No human health hazard, no further analysis
By-product egg storage	High temperature	Yes	Y	Y	N	Y	—	All marketed eggs are pasteurized by processor eliminating bacteria hazard
Blood testing	Rough handling	No						No human health hazard, no further analysis
	Dirty equipment	No						No human health hazard, no further analysis
Load outs	Rough handling	No						No human health hazard, no further analysis
	Dirty trucks	No						No human health hazard, no further analysis
	Drug withdrawal	Yes	Y	Y	Y		1	Critical Control Point
	Feed withdrawal	Yes	Y	Y	Y		2	Critical Control Point

## CRITICAL CONTROL POINT DECISION TREE

Q1. Could a control measure be used by the operator at any process step?

*If answered YES proceed to question 2. If answered NO, not a critical control point*

Q2. Is it likely that contamination with the identified hazard could occur in excess of the acceptable level or could increase to an unacceptable level?

*If answered YES, proceed to question 3. If answered NO, not a critical control point.*

Q3. Is this process step specifically designed to eliminate or reduce the likely occurrence of this identified hazard to an acceptable level?

*If answered NO proceed to question 4. If answered YES, you have a Critical Control Point.*

Q4. Will a subsequent step eliminate the identified hazard or reduce its likely occurrence to an acceptable level?

*If answered YES, not a Critical Control Point. If answered NO, you have a Critical Control Point.*

## **CRITICAL CONTROL POINTS**

After the process of reviewing all the hazards that exist and procedures that are performed on the farms and hatchery, two Critical Control Points (CCP) were identified. With any Critical Control Point it is important to describe how these areas are controlled.

**CCP 1a and 1b: Vaccination and Medication Withdrawal**  
**CCP 2: Feed Withdrawal**

The control of the vaccination and medication withdrawal is outlined in the Hybrid's Quality Practices for Farms.

Hybrid Turkeys has taken a proactive approach in the identification of the Critical Control Points. We have also taken steps to control critical inputs: feed, vaccines and medications.

### **Vaccination and Medication Controls:**

Hybrid Turkeys employs a licensed Veterinarian, who is responsible for the distribution of all vaccines and medications within our operation.

Veterinary issues are regulated by the licensing body, the College of Veterinarians of Ontario (CVO). Further to abiding by Canadian regulations every 4 to 8 weeks an Agriculture Canada veterinarian visits and/or reviews the health, vaccination and medication reports that are maintained by the Hybrid Staff Veterinarian.

Those individuals who administer drugs on the farms follow the administration instructions of the Veterinarian and a HACCP "prerequisite" QP.per.frm.0018 is in place to ensure accuracy. The veterinarian and/or the manufacturer set drug dosage levels. The manufacturer sets the drug withdrawal periods (Manufacturer withdrawal periods listed in QP.per.frm.0017).

The Hybrid Staff Veterinarian is responsible for developing the vaccination program and monitoring the program with the use of vaccination reports that are completed by the Service Crew Supervisors and are reported to the Staff Veterinarian.

Any and all treatments with medications are done only with the use of drugs distributed by the Hybrid Staff Veterinarian.

### **Feed Controls:**

Hybrid Turkeys deals with one main supplier of feed. There is a contractual agreement between Hybrid Turkeys and the feed supplier.

The feed supplier makes custom feeds as specified by the Hybrid Nutritionist. Feed is ordered through the feed supplier according to the feeding program developed by the Hybrid Nutritionist (QP.per.frm.0008). Hybrid Turkeys tests the feed quality randomly and the Hybrid Nutritionist maintains a record of the results.

The feed supplier itself is highly regulated by the Canadian Food Inspection Agency. Annually, Hybrid Turkeys receives a copy of the Canadian Food Inspection Agency's review of the feed supplier. The formal review is kept on file as part of the HACCP plan.

The feed supplier also conducts weekly feed quality tests that the Hybrid Nutritionist has access to.

## ROAD MAP TO ISO REGISTRATION

### ISO TEAM

A multi-disciplinary team was formed to represent all key areas of Hybrid's production system.



### ISO ELEMENT REVIEW

What are the ISO elements?  
What are we doing now that meets ISO standards?  
What do we need to change?



### APPLYING ISO ELEMENTS TO HYBRID TURKEYS

After reviewing our system and the ISO elements a plan was developed to apply ISO to Hybrid Turkeys.



### ISO MANUAL DEVELOPMENT

Describing how our procedures meet the ISO standard. Forming an ISO manual.



### INTERNAL REVIEW

Reviewing each section of the ISO manual to ensure what is written is what is practiced and double checking to ensure ISO standard is met.



### AUDITS BY AN INDEPENDENT REGISTRATION GROUP



### ISO REGISTRATION

## HYBRID TURKEYS' APPROACH TO ISO

The implementation of an ISO program was a major undertaking. Hybrid Turkeys took the time, as in the HACCP project, to review our existing systems. After reviewing our operational systems we began applying ISO 9001 standards to our systems. We felt it was very important to apply the ISO standard to our system instead of applying our system to ISO. The ISO 9001 standard places an emphasis on continual improvement and taking a proactive approach to preventing deficiencies in product or service.

Hybrid Turkeys system consists of seven key departments and the 20 ISO elements were applied to these departments.

HYBRID'S DEPARTMENTS	ISO ELEMENTS
Management	<ul style="list-style-type: none"> <li>• 4.1 Management Responsibility</li> <li>• 4.18 Training</li> </ul>
Production	<ul style="list-style-type: none"> <li>• 4.8 Product identification and traceability</li> <li>• 4.9 Process control</li> <li>• 4.10 Inspection and testing</li> <li>• 4.11 Control of inspection, measuring and test equipment</li> <li>• 4.12 Inspection and test status</li> <li>• 4.13 Control of nonconforming product</li> <li>• 4.15 Handling, storage, packaging, preservation and delivery</li> </ul>
Sales and Service	<ul style="list-style-type: none"> <li>• 4.3 Contract review</li> <li>• 4.19 Servicing</li> </ul>
Research and Development	<ul style="list-style-type: none"> <li>• 4.4 Design control</li> </ul>
Purchasing	<ul style="list-style-type: none"> <li>• 4.6 Purchasing</li> </ul>
Continuous Improvement	<ul style="list-style-type: none"> <li>• 4.14 Corrective and preventive action</li> <li>• 4.17 Internal quality auditing</li> <li>• 4.20 Statistical techniques</li> </ul>
Quality System	<ul style="list-style-type: none"> <li>• 4.2 Quality system</li> <li>• 4.5 Document control</li> <li>• 4.16 Control of quality records</li> </ul>



## **SUMMARY**

The world's food system, including the turkey production chain, will receive increasingly stringent demands for superior quality and safe food products.

As a primary breeder, Hybrid plays an integral role in the turkey production chain. We must ensure that our products are profitable for our customers and safe from a food safety perspective. To ensure we meet the needs of our customers Hybrid implemented both HACCP and ISO programs.

Hybrid is dedicated to excellence and continual improvement. We are proud of our HACCP and ISO registration accomplishment, in particular because it took the commitment of each individual at every location within the Hybrid organization.