SUBJECT: Trichinosis - Control of	09-A-01
REGULATORY REFERENCES AR 42/2003 *Meat Inspection Regulation* (Consolidated to 112/2009) Sections 15.1 & 54 Meat Facility Standards (MFS) Sections 3.3 (a) to (f) inclusive	**Initial Release** Sept 1, 2009 **Page 1 of 6**

RATIONALE

Trichinosis and Trichinellosis are names for a disease, of pigs and humans, caused by infection with a parasitic worm called Trichinella spiralis.

The life cycle of this parasite is as follows:

1. The adult worm lives in the wall of the small intestine of humans, or pigs.
2. Adult females lay their eggs and newly hatched larvae penetrate lymph vessels in the wall of the intestine.
3. Once they have entered the lymphatic circulation the larvae will reach general circulation and eventually the muscles of the body.
4. The larvae will remain in the muscle, in a dormant (inactive) state, until they are eaten by another pig, or human being.
5. The larvae then develop into an adult worm in the intestine and the cycle repeats.

Note: Symptoms of infection, in humans, may appear within 12 hours of eating infected pork. At first there will be "intestinal flu-like" symptoms. This is due to the migration of the ingested *T. spiralis* larvae in the intestinal wall.

When the larvae are in the blood stream there will be symptoms of edema (watery fluid) around the eyes along with fever. These symptoms will generally appear within 5 to 7 days. By the 10^{th} day and depending on the severity of the infection affected individuals may exhibit intense muscular pain, difficulty breathing and weakening of pulse and blood pressure. Death may occur if the infection is severe enough.

In most instances the patient suffers variable degrees of rheumatic muscular pain for the rest of their lives.

Trichinosis is very rare in Canada and has not been detected in Alberta hogs for many years.

Proper cooking of pork **will prevent** human **infection** with Trichinella spiralis.

Note: Cooking temperatures of 58^0 C, or higher, will kill the parasite.

Trichinellosis, in pigs, has been designated as a "**Reportable Disease**" under the Heath of Animals Act (Canada).

Note: Anyone knowing of, or suspecting, the presence of a "Reportable Disease" must notify the Canadian Food Inspection Agency (CFIA). Upon notification the CFIA will assume responsibility for monitoring and control.

In addition to listing trichinellosis as a "Reportable Disease" **the CFIA Trichinella control program includes the following elements**:

1. Regular testing of the mature pig population in Canada.

   Note: This is a serological (blood) test that is conducted on approximately 15,000 sows every 5 years.

2. Annual testing of hog carcasses at federally registered abattoirs.

   Note: All testing is done using a muscle digestion test. Under this program approximately 30,000 market hog, 3,000 breeder hogs and 200 wild boar carcasses are tested each year.

3. Implementation of immediate and appropriate eradication measures whenever Trichinella spiralis is detected.

   Note: Eradication measures will include herd quarantines and depopulation.

4. Controlling the feeding of waste human food, or garbage, to hogs.

   Note: This is done in accordance with sections 112 & 113 of the *Health of Animals Regulation* (Canada). All hog producers that want to feed food wastes (e.g. from grocery stores, bakeries, etc.) must be registered and issued a permit. Registered farms are subjected to regular CFIA inspections to ensure that all garbage is properly cooked before feeding it to hogs. **Meat and restaurant waste can't be fed to pigs** even with a permit.

This CFIA Trichinella control program allows Canada to demonstrate that our hog population is almost free of trichinae and our testing methods are consistent with the requirements of the Office International des Epizooties (OIE). This provides market access of Canadian pork products to other countries (export).

Note: Although the results of routine monitoring of Canadian pork indicates that the risk of infection is virtually nonexistent, the CFIA will continue to monitor for *Trichinella spiralis* because of the ever present possibility that the parasite could be re-introduced to swine herds by other susceptible wildlife species. Bears and rats are two common species that can be affected with Trichinella spiralis.

Another role of the CFIA is to ensure that the Canadian consumer is protected through the use of appropriate processing techniques e.g. cooking, freezing, curing, etc.

Note: Meat, or meat products, that contain striated (skeletal) muscle and have the appearance of cooked product, and products that are usually eaten without further cooking must be treated in a manner that has been proven to effectively destroy all T. spiralis.

OBJECTIVE/OUTCOME

Pork, or meat products that contain pork striated (skeletal) muscle, that have the appearance of a cooked product or that are customarily eaten without further cooking will be heated, cured, frozen, or otherwise treated in such a manner to destroy all *Trichinella spiralis*.

Note: This requirement **does not apply to forms of fresh pork** containing striated muscle, **and pork products** including, but not restricted to, fresh un-smoked sausages, side bacon, Wiltshire bacon, smoked pork jowls, and any other prepared meat products **that DON'T appear to be cooked.**

The following methods **will** effectively **destroy T. spiralis**

Heat

Heating Process to ensure the destruction of *Trichinella* in Pork Meat	
Minimal Internal Temperature (°C)	**Minimum time**
49	21 Hours
50	9.5 Hours
52	4.5 Hours
53	2.0 Hours
54	1.0 Hours
55	30 minutes
56	15 minutes
57	6 minutes
58	3 minutes
59	2 minutes
60	1 minutes
62	1 minutes
63	Instant

Note: The cooking process must ensure that all parts of the product reach the required temperature. The temperature at the center of the largest portion being heated must be recorded to ensure that all parts were properly heated.

All parts of all products must be entirely submerged in the water bath throughout the heating process.

The time taken to bring the middle portions of the product from 15^0 C to 49^0 C must not exceed 2 hours unless the product is cured, or fermented.

Time does not need to be monitored when internal product temperatures of 59^0 C to 62^0 C are reached, providing the product's minimum thickness exceeds 5.1 cm and refrigeration of the product does not begin within 5 minutes of reaching an internal temperature of 59^0 C.

Freezing

Any of the following methods of freezing will destroy T. spiralis.

Products must be kept **frozen at the indicated temperature** for an **uninterrupted length of time** that is **equal to**, or longer than, the **time specified** in the following tables:

Method #1

Time Required to Destroy *Trichinella spiralis* at - 25^0 C, or Lower.	
Group 1 pork products with maximum thickness of 25 cm	10 days
Group 2 pork products with thickness between 25 - 50 cm	20 days

Note: To effectively kill *Trichinella spiralis* at - 25^0 C or lower, all insulating packaging material must be removed before the product is frozen and boxes must be stacked in a manner that permits air circulation. This will allow the product to reach -25^0 C as soon as possible. **Spacers are required and shrink wrap is NOT allowed.**

Freezer Temperature	**Minimum Number of Days (uninterrupted)**	
(°C)	**Group 1**	**Group 2**
- 15	20	30
- 23	10	-
- 25	-	20
- 29	6	12

Method # 2

Note: In the above table Group 1 products are less than 15 cm thick.

Group 2 consists of products that are 15-50 cm thick.

For this method to be effective all insulating packaging material must be removed before the freezing process is started and boxes must be stacked in a manner that permits air circulation. This will allow the product to reach the desired temperature as soon as possible. **Spacers are required and shrink wrap is NOT allowed.**

Method #3

For this method, **products must be frozen before starting** the **treatment period**. The product is then held in accordance with one of the time and temperature combinations in the following table:

Freezing Method # 3 to Ensure Destruction of *Trichinella*	
Product *Internal* Temperature(°C)	**Minimum Time (hours)**
-18.0	106
-21.0	82
-23.5	63
-26.0	48
-29.0	35
-32.0	22
-35.0	8
-37.0	½

Note: Temperature must be measured to the next lowest tenth of a degree C or, in the case of less sensitive thermometers, to the next lowest full degree C (e.g. if the thermometer can't read -23.5^0 C, the temperature shall be taken and recorded as -24^0 C.

For **each lot**, the **internal temperature** must be **monitored by a thermocouple** placed **in the CENTRE of the thickest piece** of meat **and in the warmest location of the freezer** (e.g. well away from the cooling equipment).

With this method, spacers are not required and it is acceptable to have shrink wrap around the pallets.

All smokehouses, other cooking devices, freezers, or other rooms, or devices used to destroy *Trichinella spiralis* will be equipped with accurate (calibrated) thermometers and recording devices.

Note: To provide proof of satisfactory treatment, time and temperature must be recorded continuously.

Hog carcasses will be identified in a manner that will make it possible for the MIB Inspector, or operator of the abattoir, to determine the farm of origin.

Note: In the event that the CFIA determines that *Trichinella spiralis* is present in a herd of pigs a recall of animals sent for slaughter would be expected.

A properly applied tattoo (in accordance with section 73(a) of AR42/2003 should provide suitable identification of whole carcasses.

REQUIREMENTS FOR AN AUDITABLE SYSTEM (MFS)

Requirements for **"Trichinosis- Control of"** will be met when:

1. Written **"Trichinella Control Procedures"**, for all products produced, in the "Licensed Meat Facility" (facility), are on file.

   Note: These procedures must:

   a) ensure that the proper combination of time and temperature, as listed in the tables in the preceding section, is met;

   b) meet all of the requirements of section 9-3 subsections (a) to (f) of the MFS

2. Calibrated and up-to-date, "**Trichinella Control Records"** are on file.

   Note: These records must demonstrate that products were treated in accordance with the written **"Trichinella Control Procedures"** and as a minimum must include:

REQUIREMENTS FOR AN AUDITABLE SYSTEM (MFS) (continued)

a) date;

b) time;

c) product name;

d) amount of product;

e) internal temperature reached;

f) time the product was held at that temperature (if required);

g) initials of responsible facility personnel

3. Only properly calibrated thermometers are used to determine temperatures.

   Note: **"Calibration Records"** for these thermometers must be on file.

4. On site observations demonstrate that hog carcasses are properly identified.

   Note: Identification must be detailed enough to ensure that carcasses can be traced back to their source.

RELATED SECTIONS OF TIPM

03-G-03 Nitrate & Nitrite Addition
03-G-04 Fermented Meats
03-G-06 Product Cooking

SUBJECT: Cysticercosis - Control of	09-A-02
REGULATORY REFERENCES AR 42/2003 *Meat Inspection Regulation* (Consolidated to 112/2009) Sections 47 & 54	**Initial Release** Sept 1, 2009 **Page 1 of 2**

RATIONALE

Cysticerci are the intermediate forms of various types of tapeworms.

Note: Cysticerci appear as small, but readily visible, cream, to yellow colored, fluid filled cysts. Those that occur in cattle and pigs are the most common. Cysticercus ovis are approximately the size of a mustard seed, and are by far the most common cysticercus seen by meat inspectors in Alberta. Two of the cysticerci seen in sheep are much larger.

The most important cysticercus, from the standpoint of meat safety, is Cysticercus bovis. This is the only cysticercus found in cattle.

Note: Even though **the incidence of this parasite is low,** Meat Inspection Branch (MI) Inspectors make cuts in the masseter (cheek) muscles and the heart of all cattle to ensure that it is not present. The diaphragm is also another location that will reveal the presence of C. bovis if it is present in the carcass.

Theoretically C. cellulosae could also be a food safety hazard.

Note: It is believed that **C. cellulosae**, which **affects pigs**, has been eliminated from the Canadian swine population therefore MIB Inspectors don't make incisions, in the masseter muscles, or hearts, of pigs to look for this parasite.

The adult tapeworms of C. bovis, or C. cellulosae, develop in the human intestine after viable cysts are eaten. Cattle, or pigs, become infected when their feed is contaminated with the feces of people that have the adult tapeworm.

C. bovis and C. cellulosae have been designated as "Reportable Diseases" under the Health of Animals Act (Canada).

Note: Anyone that even suspects the presence of a "Reportable Disease" must notify the Canadian Food Inspection Agency (CFIA).

The salvage of meat, from carcasses affected with C. bovis, will only be allowed if all of the requirements set out by the CFIA are met.

Note: In the event that C. cellulosae was ever detected in a **pig** carcass **salvage** of meat would **not** be **allowed**. The entire carcass and all viscera would be condemned and properly disposed of under the supervision of a CFIA inspector. The CFIA would also go to the farm of origin to implement control and eradication procedures.

Three species of **cysticerci** occur in **sheep**. They are C. ovis, C. pisiformis and C. tenuicollis. These are the most common cysticerci seen by MIB Inspectors.

Note: These cysticerci are **not a food safety hazard** because the adult tapeworms, which develop from these cysts, are parasites of the canine species (e.g. dogs, wolves, coyotes, etc.).

Although there is no human health risk, severely affected carcasses may be condemned for aesthetic (appearance) reasons.

Affected carcasses should not be fed to dogs, particularly those that are in contact with sheep, as this will serve to perpetuate the cycle.

OBJECTIVE/OUTCOME

All cattle, sheep and swine will be subjected to a complete and thorough post-mortem examination.

Note: A complete and thorough post-mortem examination will ensure the detection of cysticerci when they are present.

Salvage of meat from carcasses affected with C. bovis (beef tapeworm cyst), for human consumption, will be done under the immediate supervision of a veterinarian or MIB Inspector.

Note: The veterinarian, or MIB Inspector, will ensure that:

a) any condemned portion containing a cyst and immediately surrounding tissue is removed from the carcass and properly disposed of **AND**

b) the rest of the carcass, or any associated meat product is held in a freezer at -10^0 C, or lower, for a minimum of 10 days **OR**

c) the meat is heated, throughout, to a temperature of at least 60^0 C.

REQUIREMENTS FOR AN AUDITABLE SYSTEM (MFS)

Requirements for **"Cysticercosis- Control"** will be met when:

1. Written **"Cysticercosis Control Procedures"**, for handling meat products that are going to be salvaged, for human consumption, from a carcass affected with C. bovis are on file.

   Note: These procedures must:

   a) be developed specifically for the "Licensed Meat Facility" (facility);

   b) meet all of the requirements of items (A) and (B) or item (C) listed in the preceding section of this document

2. Salvaged meat products are treated in accordance with the written procedure.
3. Calibrated thermometers are used to determine temperatures.
4. **"Calibration Records"** are kept for the thermometers.
5. Calibrated and up-to-date, **Cooking, or Freezing, Records** are kept.

   Note: At a minimum these records must include:

   a) date;

   b) time;

   c) product name;

   d) amount of product;

   e) internal temperature reached, or freezer temperature maintained;

   f) time the product was held at that temperature (if required);

   g) initials of responsible facility personnel

RELATED SECTIONS OF TIPM

03-B-03 Calibration Procedures - Records of
03-G-06 Product Cooking
08-B-01 PM Inspection - Cattle - Head
08-B-02 PM Inspection - Cattle - Thoracic Viscera
08-B-04 PM Inspection - Cattle - Carcass
08-D-03 PM Inspection - Sheep, Goats & Deer - Abdominal Viscera
08-D-04 PM Inspection - Sheep, Goats & Deer - Carcass

SUBJECT: Meat Products - Protein Content of	09-B-01
REGULATORY REFERENCE SOR/90-288 *Meat Inspection Regulations*, 1990 (Canada) Schedule 1 Note: This is federal rather than provincial legislation.	**Initial Release** Sept 1, 2009 **Page 1 of 2**

RATIONALE

When fillers are added to meat products the consumer has the right to know how much protein, in the final product, was derived from meat, or meat products.

Test results, from an independent laboratory, should be available to confirm that the products are in compliance with minimum protein requirements.

OBJECTIVE/OUTCOME

Meat products will meet the "Meat Product Protein" requirements of Schedule 1 of SOR/90-288.

Note: A couple of **examples** from Schedule 1 are **uncooked meat products containing filler** and **cooked** meat products containing filler.

The schedule requires that uncooked meat products, containing filler, have at least 9.5% "Meat Product Protein" and at least 11% total protein. **Cooked meat products**, containing filler, must have at least 11.5% "Meat Product Protein" and at least 13% total protein.

"Meat Product Protein" is defined as protein that has been derived from meat or meat by products. Protein from mechanically separated meat and partially defatted fatty tissue can be considered when calculating meat product protein content.

Some products, e.g. **white pudding and haggis are exempt** from the minimum protein requirements of Schedule 1.

Schedule 1 can be viewed at:

http://laws.justice.gc.ca/en/ShowFullDoc/cr/SOR-90-288///en

Labels will accurately reflect the actual protein content of each meat product.

Note: When a portion of a food product has the appearance of a meat product only that part needs to meet the above minimum protein requirements.

When a meat product is blended with a non-meat product and has the appearance of a meat product, the entire preparation must meet the minimum protein requirements.

Minimum protein requirements don't apply when a meat product is used only for flavoring and the final product is not perceived, or generally recognized, by consumers, to have the nutritional qualities normally associated with a meat product.

Independent laboratory test results verifying the protein content of each meat product will be on file.

REQUIREMENTS FOR AN AUDITABLE SYSTEM (MFS)

Requirements for **"Meat Products- Protein Content of"** will be met when*:*

1. Laboratory test results are on file for all pre-packaged and labeled products.

   Note: Final test results must demonstrate that products meet the "Meat Product Protein" requirements of Schedule 1 of SOR/90-288.

2. Documented reformulations, or recipes, are on file.

   Note: These reformulations must show what has been done, to adjust the protein content, when laboratory tests indicate the product was not in compliance.

RELATED SECTIONS OF TIPM

09-B-02 Meat Products - Fat Content of

11-C-01 Label Information for Pre-packaged Retail Products

11-C-03 Label Information for Bulk Shipping Containers

SUBJECT: Meat Products - Fat Content of	09-B-02
REGULATORY REFERENCE SOR/90-288 *Meat Inspection Regulations*, 1990 (Canada) Schedule 1 Note: This is federal rather than provincial legislation.	**Initial Release** Sept 1, 2009 **Page 1 of 1**

RATIONALE

Consumers have the right to know that various types of ground meat products have acceptable maximum levels of fat. They also need to be assured that products such as lard and suet meet acceptable standards.

Test results, from an independent laboratory, should be available to confirm that the products are in compliance with acceptable standards.

OBJECTIVE/OUTCOME

Meat products will meet the "Maximum Fat Content" requirements of Schedule I of SOR/90-288 (STANDARDS FOR MEAT PRODUCTS).

Note: The only products, in Schedule I, for which maximum fat levels are stated, are the four different types of ground meat. The maximum allowable limits are:

a) 30% in Regular;
b) 23% in Medium;
c) 17% in Lean;
d) 10% in Extra Lean

The schedule also lists various chemical requirements for lard, leaf lard and suet. The chemical requirements include but are not limited to:

a) relative density;
b) refractive index;
c) saponification value

Schedule I can be viewed at:
http://laws.justice.gc.ca/en/ShowFullDoc/cr/SOR-90-288///en

The actual fat content, of each ground meat product, will be accurately stated on the label.

Independent laboratory test results will be on file.

Note: These results must verify that the:

a) fat content of ground meat products are within the maximum allowable limits;
b) the chemical parameters for lard, leaf lard and suet have been met

REQUIREMENTS FOR AN AUDITABLE SYSTEM (MFS)

Requirements for **"Meat Products- Fat Content of"** will be met when*:*

Laboratory test results are on file for all pre-packaged and labeled ground meat products showing that they meet the "Maximum Fat" requirements of Schedule I of SOR/90-288.

Note: Laboratory test results must also be on file that verify that the chemical composition of products such as lard are within the parameters set out in Schedule I of SOR/90/288.

RELATED SECTIONS OF TIPM

09-B-01 Meat Products - Protein Content of
11-C-01 Label Information for Pre-packaged Retail Products
11-C-03 Label Information for Bulk Shipping Containers

SUBJECT: Water Retention & Absorption - Red Meat	09-B-03
REGULATORY REFERENCES None	**Initial Release** Sept 1, 2009
	Page 1 of 3

RATIONALE

Certain processes, primarily directed towards ensuring the safety of the finished meat product, require exposure to water.

Note: Examples of processes considered essential in ensuring food safety include washing of carcasses and immersion of edible offal in water for chilling.

Whenever meat and meat products are exposed to water it is inevitable that a certain amount of water will be absorbed and/or retained.

Note: At the time this document was written there was no provision in federal, or provincial, *Meat Inspection Regulations* for the retention of water, by single ingredient meat products except those for dressed poultry carcasses in section 25 of the federal *Meat Inspection Regulations* (MIR)

The **United States Department of Agriculture** (USDA) has regulations limiting the amount of water that can be retained in red meat products.

The Canadian Food Inspection Agency (CFIA) is considering the possibility of amending the MIR to harmonize them with the USDA "Final Rule".

The operator, of a "Licensed Meat Facility" (facility), must determine the amount of water retention, or absorption, which is unavoidable during the application of processes essential for food safety.

Note: **Retained water is** defined as water that was **not added intentionally,** or as a product ingredient.

The amount of **water retained**, or absorbed, in the finished product, **must not exceed** what has been determined to be the **unavoidable amount**.

Note: Good process control measures have to be in place if the operator, of the facility, is going to continuously ensure that the amount of retained water, in raw products, is, in fact, unavoidable.

Labels must state how much water has been retained, or absorbed.

Note: The retained water statement, on the label, must be prominent. It must disclose the maximum amount of water and how it became incorporated.

OBJECTIVE/OUTCOME

Note: The **content** of this section is **based on** information in the CFIA "**Meat Hygiene Manual of Procedures"**. This information **applies primarily to organ meat** rather than to carcasses, or portions of carcasses.

The facility will have a written and validated "**Retained Water Control Program**", in place for edible offal that is exposed to water during processing.

Note: This program must ensure that prescribed requirements for water retention are met.

A **"Retained Water Control Program"** is **NOT required for the following** post evisceration processes where water is used to:

a) flush stomachs, small intestines, large intestines, rectum, braided marrow gut, and chitterlings to remove digestive tract contents;

b) flush, or scald stomachs, tongues, lips, intestines and rumen parts;

c) wash excess blood from products such as hearts, livers, brains, tendons, etc;

d) wash beef heads

If these scalded, flushed, or washed, **products are subsequently chilled by immersion** in water and/or ice a written **"Retained Water Control Program" IS required**.

The "**Retained Water Control Program**" will include testing methods to ensure that edible offal has no more than 0.5% retained water.

Note: No further testing is required if weights of the product, taken before and after the final rinse, or chilling, show that the operator is within the 0.5% tolerance limit.

Data will be available proving that the retention of water, in raw, edible offal during post-evisceration processing is an inevitable consequence of processes required to ensure food safety.

Note: Examples would include activities such as chilling by immersion in water and washing to remove contamination.

The maximum percentage of retained water will be calculated and disclosed on the label.

Note: The retained water statement must be prominently located on the principal display panel and should state the product "contains up to x% retained water" or, "with x% absorbed water.

Existing labels can be modified by using pressure sensitive stickers, or indelible ink rubber stamps with the appropriate statement relating to the percentage of retained water.

REQUIREMENTS FOR AN AUDITABLE SYSTEM (MFS)

Requirements for "**Water Retention & Absorption - Red Meat"** will be met when**:**

1. A written and validated **"Retained Water Control Program"**, has been developed and is on file.

   Note: This program must cover all edible offal that has been exposed to water after completion of dressing procedures.

2. Valid methods are in place to calculate water retention, or absorption.

   Note: To be valid these methods must be reproducible and verifiable. For example a facility might choose to weigh carcasses, and products following evisceration, before final washes and chilling and again before packaging, or shipping.

REQUIREMENTS FOR AN AUDITABLE SYSTEM (MFS) (continued)

3. Water retention data is on file for edible offal that has been in contact with water as a part of the post-evisceration process.
4. Appropriate procedures will be in place to deal with instances where the water retention, or absorption limits have been exceeded.

Note: The amount of retained water must be declared on the label when the amount exceeds 0.5% and subsequent batches will be monitored. If subsequent testing reveals that retained water levels remain above 0.5%, then corrective steps will be instituted.

When testing reveals less than 0.5% water uptake, the amount of retained water does not have to be declared on the label. In these instances the facility has to run annual water retention tests to verify that they are still below 0.5%.

RELATED SECTIONS OF TIPM

09-B-04 Water Retention & Absorption- Poultry
11-C-01 Label Information for Pre-packaged Retail Products
11-C-03 Label Information for Bulk Shipping Containers

SUBJECT: Water Retention & Absorption - Poultry	09-B-04
REGULATORY REFERENCE SOR/90-288 *Meat Inspection Regulations*, 1990 (Canada) Section 25 Note: This is federal rather than provincial legislation.	**Initial Release** Sept 1, 2009 **Page 1 of 4**

RATIONALE

Certain processes, which are primarily directed towards ensuring safety of finished poultry products, require exposure to water.

Note: Examples of processes considered essential in ensuring food safety include washing of carcasses and immersion of carcasses, portions of carcasses, giblets, etc. in water for chilling.

Whenever poultry products are exposed to water it is inevitable that a certain amount of water will be absorbed and/or retained.

The operator, of the facility, must determine the amount of water retention, or absorption, which is unavoidable during the application of processes that are essential for food safety.

Note: **Retained water is** defined as water that was **not added intentionally,** or as a product ingredient.

The amount of **water retained**, or absorbed, in the finished product, **must not exceed** what has been determined to be the **unavoidable amount**.

Note: Good process control measures have to be in place if the operator, of a "Licensed Meat Facility" (facility), is going to continuously ensure that the amount of retained water, in raw products, is, in fact, unavoidable.

Labels must state how much water has been retained, or absorbed.

Note: The retained water statement, on the label, must be prominent. It must disclose the maximum amount of water and how it became incorporated**.**

Information in this document **is considered to be "Common Industry Practice"**.

Note: Although there is no provincial legislation, regarding water retention in poultry, it is highly recommended that the operator of a "Licensed Meat Facility" comply with federal standards.

OBJECTIVE/OUTCOME

A written and validated **"Retained Water Control Program"**, will be on file

Note: This program must ensure that allowances, listed in the following table are met.

Product	Weight of Dressed Carcass	Maximum Weight Increase
Turkeys	Under 4.5 kg	8.0%
	4.5 kg to under 9 kg	6.0%
	9 kg and over	5.5%
Chickens	Under 2.3 kg	8.0%
	2.3 kg and over	6.0%
Other species	Any weight	6.0%
Giblets	Any weight	4.0%

The above table is taken from section 25 of SOR/90-288 (federal MIR).

In addition to the above: detached necks, and other salvaged portions (e.g. breasts, breast fillets, wings, legs, thighs, drumsticks, etc.) must meet an 8% maximum weight increase allowance.

The following **products** are **exempt from** a **"Retained Water Control Program"**

a) multi-ingredient poultry products such as basted turkey carcasses, with, or without, giblets;

b) giblets within a basted turkey carcass

The following **processes** involving the use of water following evisceration are also **exempt from** a **"Retained Water Control Program"**:

a) flushing gizzards and chitterlings to remove digestive tract contents;

b) removing the lining from gizzards;

c) removing gall bladders from livers;

d) removing the pericardial sac from hearts;

e) scalding paws (feet);

f) washing hearts, livers, gizzards, paws, etc. to remove excess blood;

g) washing to remove contents from the mouth and nasal passages of head and feet-on carcasses

A written and validated **"Retained Water Control Program"** is **required** if any of these scalded, flushed, or washed, **products** are **subsequently chilled** by contact with water and/or ice.

The "**Retained Water Control Program**" will include testing methods which ensure that the retained water in poultry products does not exceed the stated limits.

Note: **Testing of Carcasses**

Ongoing retained water monitoring **tests** are **not required for dressed carcasses**, or packaged carcass portions **if** a **"Physical Water Pick-up Test"**, on **50 carcasses** shows:

a) an **average percentage weight increase**, for the test carcasses, of **less than half of the regulatory allowances AND**

b) **all carcasses meet** the **regulatory limits** for percentage weight increase

A **"Physical Water Pick-up Test"** is **conducted as follows:**

a) at least fifty (50) whole, untrimmed poultry carcasses are selected at random;

b) each carcass is identified;

c) each carcass is weighed twice with the first weight being taken before the carcass enters the first carcass washer following inspection and the second weight being taken before packaging as whole carcasses, or as parts, after normal chilling and drainage times have been observed;

d) both weights are recorded for each carcass;

e) the following information, for each carcass will be recorded on a data collection sheet:

i) initial and final individual carcass weights;

ii) percentage weight increase, or decrease, for each carcass with the initial carcass weight being the denominator for this percentage calculation;

iii) average weight increase, or decrease for the entire group;

iv) number of carcasses with retained water levels above regulatory limits with a 20% allowance to account for inherent biological, processing and measurement variability

A maximum of three (3) out of every 50 birds are allowed to retain, or absorb, 20% more water than the allowable regulatory limits.

For example, the specified regulatory maximum for broiler chickens weighing up to 2.3 kg is 8%.

20% of 8 is 1.6 therefore, 3 of 50 carcasses are allowed to have a percentage weight increase of up to 9.6%.

f) completed data sheets will be kept on file as a record of water retention, or absorption

A **"Physical Water Pick-up Test"** will be **conducted at least once a year** to verify that carcasses still meet the requirements of the test.

Testing of Giblets, Detached Necks and Salvaged Portions

A minimum of 50 portions e.g. giblets (as a group, or individual hearts, livers & gizzards) detached necks, skinless breasts, etc. can be weighed in bulk to obtain both initial and final weights.

No further ongoing testing is required if initial testing results, on 50 portions, reveals water retention of less than 0.4%.

When testing reveals excessive water retention, or absorption, **the next lot will be tested. If results of the second test also show excessive water retention**, or absorption**, processes will be implemented to reduce the amount of retained**, or absorbed, **water.**

Note: The following methods are effective in reducing water retention or absorption:

a) minimizing the surface area of flesh exposed to water by avoiding small cuts, preventing cuts or tears in the skin, or complete trussing of the carcass;

b) promotion of better drainage by separating neck muscles from the overlying skin, or removing the necks before washing;

c) reducing the amount of ice and/or water used;

d) reducing the length of time products are left in the ice water;

e) draining chill tanks, or vats, at least ½ hour before removing the carcasses;

f) draining carcasses on a drip line and squeezing out water that has accumulated beneath the skin by hand;

g) using automated equipment

Products NOT in compliance with the maximum allowable limits for water retention and absorption **will be handled appropriately**.

Note: Appropriate methods of handling products that are not in compliance include:

a) handling as inedible material (e.g. for animal food, or disposed of);

b) draining until they are in compliance;

c) cutting up, skinning, or boning out and incorporating non-compliant products with other packaged product in proportions that ensure that the final mixture is in compliance

REQUIREMENTS FOR AN AUDITABLE SYSTEM (MFS)

Requirements for "**Water Retention & Absorption - Poultry"** will be met when:

1. A written and validated **"Retained Water Control Program"**, has been developed and is on file.

   Note: This program must cover all poultry products exposed to water after completion of dressing procedures.

2. Valid methods are in place to calculate water retention, or absorption.

   Note: To be valid these methods must be reproducible and verifiable.

3. Water retention data is on file for carcasses and other poultry products that are in contact with water as a part of the post-evisceration process.

   Note: Data sheets, from "Physical Water Pick-up Tests", will meet this requirement.

4. Appropriate procedures will be in place to deal with instances where the water retention, or absorption limits have been exceeded.

   Note: For example, if giblets are found to have more than 0.5% retained water the excess amount must be declared on the label and subsequent batches need to be monitored.

   If subsequent testing reveals that the giblets still exceed 0.5%, then corrective steps need to be taken. When testing reveals less than 0.5% water uptake, the amount of retained water does not have to be declared on the label. In these instances the facility has to run annual water retention tests to verify that they are still below 0.5%.

RELATED SECTIONS OF TIPM

09-B-03 Water Retention & Absorption - Red Meat

11-C-01 Label Information for Pre-packaged Retail Products

11-C-03 Label Information for Bulk Shipping Containers