Quality improvement and verification results for burnt tuna:

May 25, 2011　Surroudings SupersonicWave Laboratory

SuzouArakaki®　　URL　https://syuzou.awk.jp/

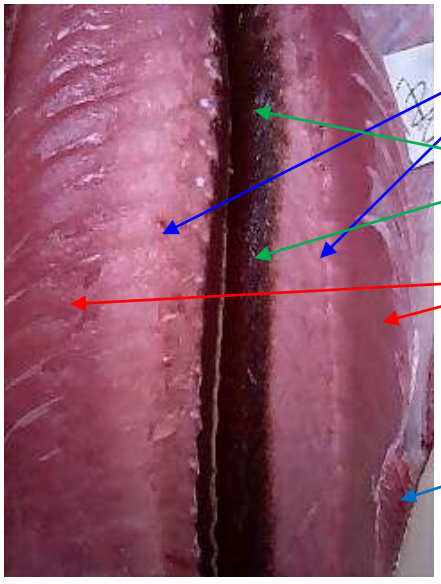
1　At the beginning

For general consumers , burnt tuna is a concept unknown is a quality evaluation term very important for tuna distribution industry . However, this burnt many cases is far apart from indicating the quality conditions of the tuna itself without reference value . I do not use any burnt terms that assert the invisible world . Tuna is blessed with thermoregulatory function as well as mammals , the center body temperature is maintained at 36 ℃ from 34 ℃ According science book tuna (* 1) . Items related to burnt tuna is not described in the book of science tuna .

Also that you have encountered in person that I can be explained theoretically burnt tuna fishing cooperatives in Auction House does not exist ever . To use the evaluation of burn is a world connoisseur who matched the quality is a current assessment of the burning 's done in standard and sensitivity of each connoisseur who has been assessed but is different from the burning of words as the actual it is a general circulation in the language evaluation criteria . I tried a logical collection of burnt tuna can be verified in four years chasing burnt . I have experienced with a single fishing tuna as a fisherman , verification method using is based on data or has autopsy analysis of the tuna and true story , of fishermen and ultrasonic diagnostic apparatus is a technique unknown .

2　Image that has been burnt and the tuna

Specimens admit burnt strong localized to one spine center image description



Strong burnt tuna level observed in the spine around.

Chiai muscle shows relatively bright brown

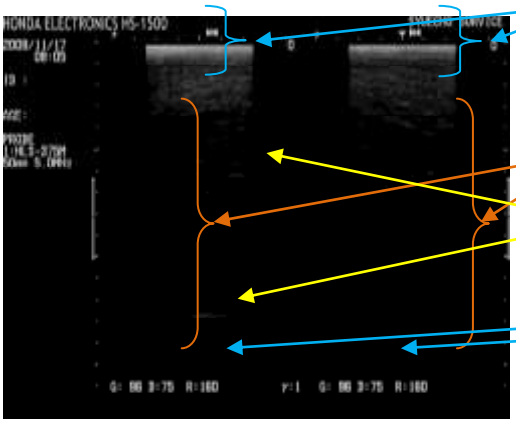
It becomes whitish desperation to infiltrate along the middle bone

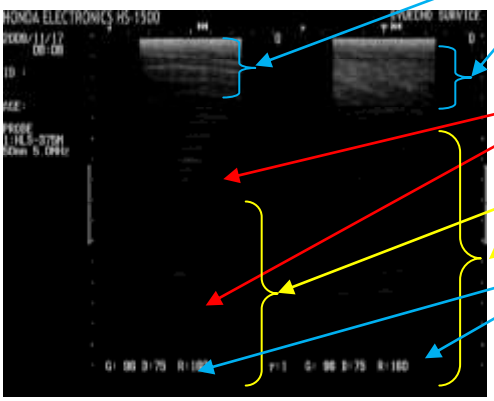
I am issued a tint of the original

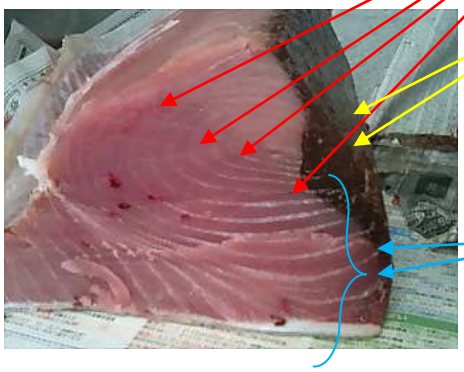
Example of the photo above is a result of tuna of judgment ride of oil is also incorrect as good senior quality clarity of ultrasound on the body. It was that you were planning to distribute high-end restaurant of its own way because it determined that the senior quality of course. Findings burnt I went to verify the quality improvement measures, those caught later.

Image of 2

The naked eye evaluation and ultrasound B-mode examination of theburnt generator







Subcutaneous fat layer is classified as a senior class ride of oil to admit 30 mm thickness echo

Echo level anechoic

Spine areflexia

Subcutaneous fat layer finds an echo crude map-like region

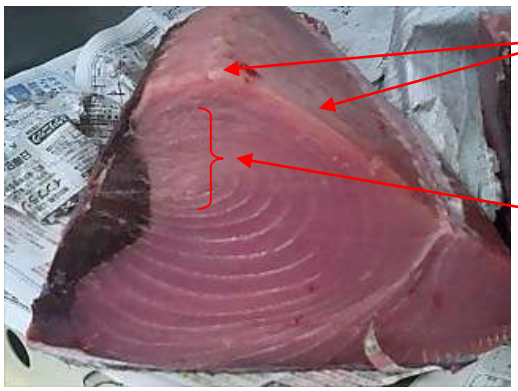
Abnormally high luminance point-like echo reflection

Spine areflexia

Boundary of the burn, only the burnt part cloudiness

Clarity is saved only

Ultrasound image at first glance, it gives the impression as of very good quality. But there is a major pitfall, spine reflection is a critical information is lost. I guess to be due to a phenomenon spine reflected signal was inhibited strongly of burnt perispinally. Since the good state of preservation is relatively Chiai muscle, it bled process was good suggested by parting plane photos and ultrasound images



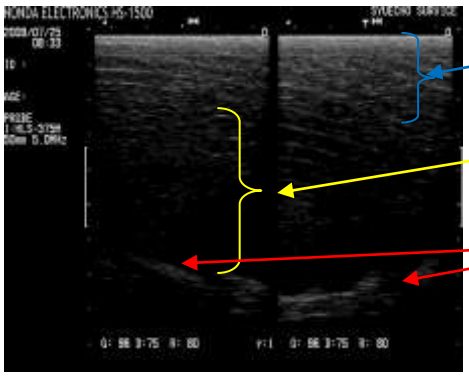
I will be appreciated part of burning as flowing along the bone

Muscle septum rupture at the boundary between muscle Chiai

Had recognized the strong burnt, but deterioration was minor is only in the center. Not observed muscle septum peeling, do not allow stain by hemolysis or hemorrhage, suggests that good results without blood processing technology. Consider quality is relatively good if you get rid of the part of the burnt. I found echo findings is also a clear echo is relatively Mi-shitsu, spine reflection loss is a major finding is determined that the image of the burnt there. This outbreak suggest whether not the findings of strong burnt resulting in localized around the spine. Smell was the smell of grilled tuna strong acidity and sweetness of the oil slightly hard texture that you relish in sashimi.

Image of 3

Observation of the septal wall fascia by ultrasound B-mode operation of cross-examination burnt generator



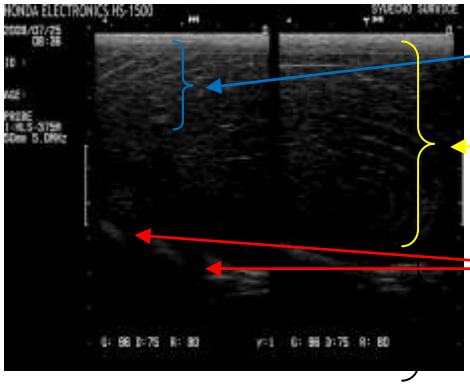
The relatively uniform muscle septum, the muscle fibers in both

Anechoic

I admit echo reflection of rough uneven

Image of 3

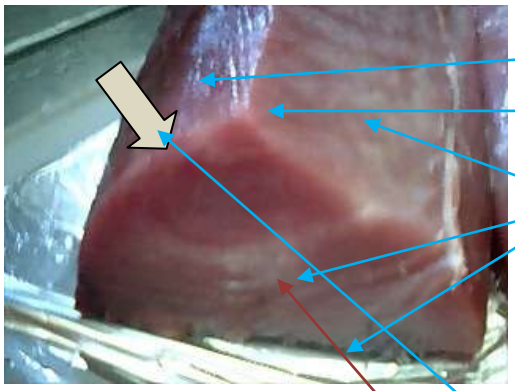
Ultrasound B-mode examination findings burnt like that is different from the burnt (konjac)



The relatively uniform muscle septum, the muscle fibers in both
Muscle septum reflection was observed, normal construction has been observed

Difference in the reflection of the fascia and bone have been observed

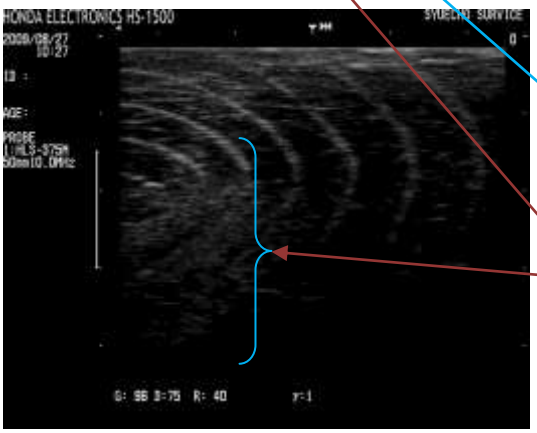
Tuna-like burnt findings (konjac)



Chiai muscle
Spine muscle attachment section

I admit to the area of the infiltration of white resistance to muscle

Tuna burnt like ultrasound findings (ultrasound observation 10MHz)

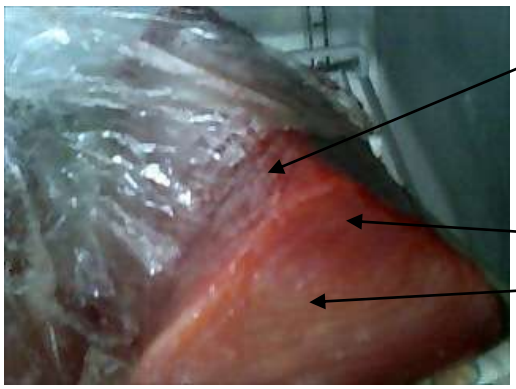


Left and right inverted photo of the observation from the ultrasound beam direction

White change region
Ultrasonic image area echo finding the matching similar to fat deposition

Only quality change and burnt indicating the speckle of findings can take that match ultrasound on admit echo Gee Nick area, and fat deposition in the ultrasonic observation is not permitted. Be returned is said to be known as cancer is often

Quality improvement process refrigeration

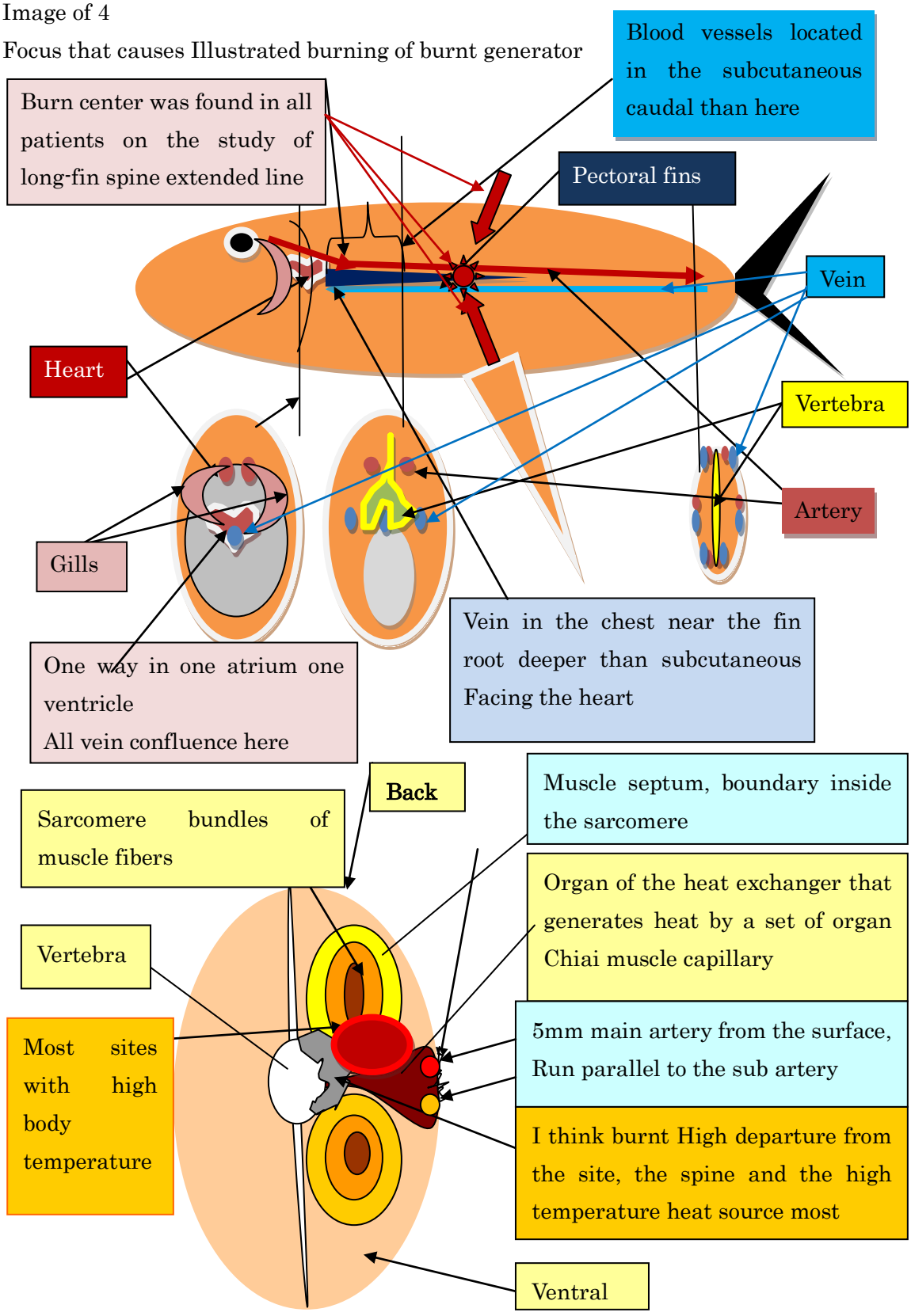


For 24 hours after adjustment by blowing air to air cooling minus 2 ℃, acknowledge the thin ice of the surface (deep water without treatment)
Flesh is becoming clear deep red
White affected zone has also colored in red

Frequently observed in tuna exhausted after spawning of physical strength, and recovery quality in only shades of red tuna original original three weeks, which have been described in the scientific book of tuna

Image of 4

Focus that causes Illustrated burning of burnt generator



6 Occurrence elucidation informal theory description of desperation

Exercise physiology of tuna It has become the focus length fin spine extended line of illustration 5 burnt . The role of the long fin has cooling fins function of discharging heat generated in the focal point responsible for fixing the water. I due to the fact that the heat transfer direction of burning is obtained as a result of the autopsy survey in the long fin as the principal reason . Tail to provide a propulsive force of about 100 km in water by high lateral amplitude has a function for obtaining a driving force (propeller) . The focus is always generating hot tail is moving at all times . I have hidden the heat generating capacity of several hundred degrees in the left and right bending specific gravity is so high spine of focus . Steering left and right , up and down direction Pectoral fin conversion , first dorsal fin is responsible for heat storage and release acceleration and control head . Chiai muscle to regulate the body temperature constant in the regulation of blood supply amount of the aggregate structure of spongy capillary blood pump heart . Chiai muscle storing heat tuna heat transfer causes a burning quickly in the presence of myoglobin is a blood cell component (iron) large amount of blood is filled in Chiai muscle . Anatomical results were suggested to heat transfer from the focal point.

Generation theory of burnt

Heat generation of focus by the high-speed oscillating motion of the tail is due to desperation . It is unlikely that the temperature rise of 42 ° to cause protein coagulation the thermal control function and may be operated also without that exceed the upper limit of the exercise thermogenesis physiologically by the height of the pressure resistance of the water in the water , but taken on board amplitude motion of the tail in 2004 and recorded a high temperature improbable of 80 degrees in the measured value of (prefectural rising rapidly the temperature of the focus to exercise far beyond the upper limit water pressure resistance is no longer the environment heat dissipation function of the air-cooled environmental changes lead to a decrease in efficiency extremely is inhibited gill blood circulation cooling function in the case when you received the explanation) gills with a heat exchange cooling function even exposed to the air-cooled environment from water-cooling system generate heat rises penetration accumulation so it is immersed in ice water pipeline negative number ℃ tuna of this high-temperature state , the internal body temperature at an accelerated rate the heat rise further pressure tightened skin is tightened in a rapid low-temperature

change reaction the occur and the likelihood of muscle fiber cross-sectional crack initiation increases with instantaneous reflection of muscle contraction , resulting in significant body quality degradation . The electrical immediately 刹機(electrical Shokka -) or in response to the situation of air resistance on board and there is resistance in the water in use , it is caused internal bleeding and fractures in focus Quality improvement process and measures burnt

That the most effective way is not to fast motion in the absence of a tail resistive load

(Movement is suppressed head is heavy) tail movement balance is improved and efficient operation suppression processing to suppress the head that is routinely performed to suppress the tail to Soku 刹 completely in water or so as not to exercise the tail on board fast motion of is excessive promotion possible . It is difficult to act violently and hold the head , but with the risk of leading to the process of accelerating the burning . Bled process does not effect less burnt measures can be obtained heat -releasing effect , but is insignificant . Without removing the gills in a hurry at the time of clamping , cooling is performed continuously in seawater hose by utilizing the heat exchange function of the gills . Blood that has been cooled by the gills to contribute to the heat removal of the body center. Bled processing is an important quality maintenance tuna but brought back in a living state as harbor River for sufficiently in post-processing to improve the quality maintained in the post-processing

7 Post-processing of tuna, quality control know-how

Image of 5

Shipboard processing method for quality improvement without causing burning

a)Description of fishing tuna pole-and-line

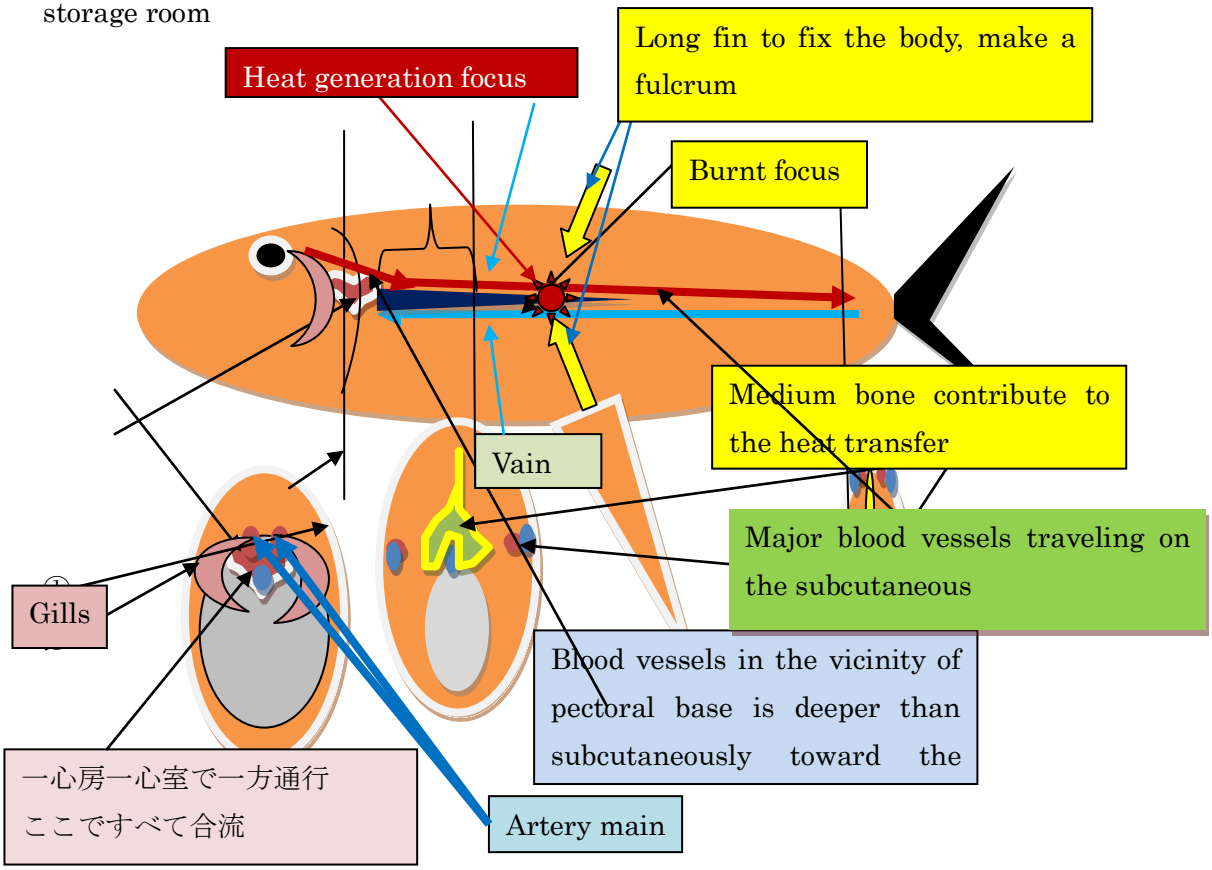
By fixing the body from head center, tuna are swimming in the water by a high-speed movement the tail. Burn to occur when to rage when I picked tuna.

Heat generation is induced by the motion of the heat vertebrae. Movement efficiency is increased heat generated increases even more when fixing the head when you close

Do not be exercised tail most important treatment

Suppressing motion by restraining the tail when caulking is important that the method

If you do not do strangled surely, to generate a desperation to rampage in the cold storage room



Bled processing method emissions directly put a cutting depth of about 5 mm in artery A position in and stage projection of Munehiresaya of pectoral fins from the tail side 4 beside finger arterial main (about 7 cm) from the heart of the shipboard blood is made possible removal. The artery wound because it is directly under skin blood is fully

removed by releasing state.　It can not pectoral base of the cut is to cut the artery unless plugged into a few centimeters knife, also bled efficiency so pressed by closed and pectoral fins of the body because there is a deep wound is not good. Vein cut B also efficiency than arteries fall (B vein cut is suggested efficiently becomes a case of processing in a state in which hollowed out the tuna and heart that went up in the new) Ship process had you tell me left and right gill When base in each by inserting a saline infusion tube cleaning extrusion discharged to ship tuna fishing crew. Also it was that of the hold the tail of the eye of tuna to make it easier to process on a sponge mat hidden such as cloth or towel.

② bled post-land work methods

It dropped the head → to pull out the moisture and blood and a cut is not scratch and a good part of the efficiency in Meat insidearea.

The reason for a cut in this part, is because the thick blood vessels traveling exists in this four places. Four places of the tail as an important process must be reliably cut the blood vessels vessels and straw-like of since the suction port of the air is not in the upper, blood will not come out.

3 suspended this way in a handstand state in the freezer → G type preparation of Aqua Science Laboratories manufacturing - with spray the product name Gmo (1,000-fold

dilution) stock solution is evenly spread on the surrounding skin.

This time it was 50cc sump. Effect of deep ocean water Gmo is used to promote the activation of the ATP circuit by Bose field formation of the tunnel photons. The reason must be Gmo No available is using because it is simple. Minatogawa fishermen's cooperative association is preparation sprayed since the use of the tuning water adding ice quality than Gm0 (G-type preparation) I can be omitted.

If it is provided with a washing equipment, tuna and insert the dress processed cold seawater wash inlet tube to the heart base of the left and right artery to discharge extrusion in cranio-caudal direction. If accustomed to discharge liquid is transparent and treated completed in about 5 minutes, there is a high possibility of burnt If you can not be confirmed if the blood pigment remains and effluent to enforce the ultrasonic inspection, and loin cut processing store or turn to immediately sell. Cells only if you are freezing at -2.2 ℃ is dead. Living cells there is a yellowfin tuna data do not allow a deterioration in the storage of the 21st at the loin has the data that is not frozen at

-2.2 ℃  Discharge water immediately after hanging 

We kept in a refrigerator set temperature minus 3 ℃ blast air cooling in this state. Fine the temperature setting, there is a reason and theory. Science references literature tuna

Treatment after 4 hours emissions 97g  Hemolysis component from blood cell components will be recognized a lot. Living blood also abundant. It clearly recognized the reaction save of blood cells by Gmo effect.

After 72 hours of discharge state, it has been drained clear mucus a small amount. (For the ultrasound data does not exist, the epidermis, which is extremely blocked ultrasound transparency there in the dry state)


Blood cell component is solidified hemolysis components dry and he has a clear mucus from the body. Blood cell components as important findings is a phenomenon that condensed immediately if it comes into the outside world is the original function is not then hemolysis, when present in the body is silky fluidity kept bleeding immediately after aggregation fixed repair of wounds seen in the living body is made to the fact that has been well conserved. Suggested by the deep ocean water energy and blood has recovered its original function, I guess to have recovered in proportion to this is also only stromal cells.

It was loin cut after 72 hours. Refrigerated managed by air cooling -3 ℃ for coloring

Loin cut refrigeration management 24 hours after the paper part photo after 96 hours, the surface is wrapped with Rikenrappu

It is the shape of a deep ruby color with a sense of transparency.

Live the good aroma texture of common, the difference on the appearance as compared to the specimen, which is the senior similar was dismantled immediately after the auction has survived cells of the body is not, it is maintained in the shade well freshness is also high state weaving, senior quality and I was determined.

In the back Simo block in the refrigerator set temperature of 0 degrees for testing, it was taken out after 8 days in the state in which it is kept at the possible environmental temperature constant without refrigerator opening and closing covered with Rikenrappu breathing surface

State photo taken off the Rikenrappu

Slightly surface is dry. Outflow without the drip, 3 mm deep body proteins from the surface has the shape of a ruby color with the same deep sense of transparency to the initial state, fresh fish wholesaler stock) Marsan: Uehara Yoichi like the report of a very good state of preservation in the evaluation a I have received.

It suggests that it was used the deep sea water as an important processing item has led to this result.

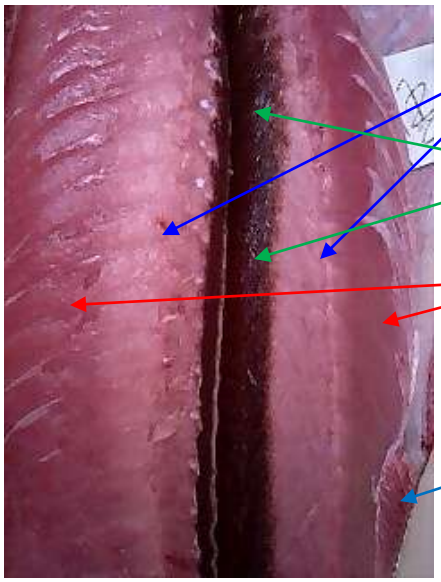
Deep ocean water does not effect obtained unless a tuning solution of Aqua Science Institute. Although the theory is being verified, if you query the Aqua Sciences, things to be due to the physical action of the aggregates clogging Bose field of tunnel photons (photon) is the most involved. The principle is not a balanced blend of minerals, it is dependent the ATP cycle is a life energy seems due to the phase conjugate of the tunnel photons phenomenon to operate efficiently.

I essential mineral components in life are involved larger features of the deep sea water, such as skin breathing and deep heat transfer promoting effect of long-term survival of the well-balanced presence and skin cells in a state that can be used as a further important matters suggest that.

In research so far, than the number of days since picked, it is considered that can be expected to improve the quality effect by the survival amount of blood, tuna found the blood cell component recovery of the quality expected. In that case refrigerated storage management technology required refrigeration blast hanging minus 3 ℃ I got the best results. Quality recovery in Dosuguroku tuna has become powdery feel of blood is a minor, green dye in the heat treatment, such as earthy become tempura strange is seen dye green Chiai muscle and lean remaining earthy, even green change in cold storage commercial value to promote it considered to be low. Layer processing and oxygen gas in

order to remove the green dye and earthy odor, sake, but have tried, such as deep ocean water washing outcome avoid publication. This hanging bled processing, suggest shall be most effective in the prone spots bigeye tuna.

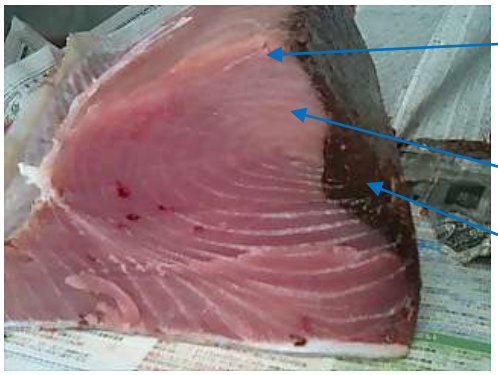
The judge was post-processing



Strong burning of canned tuna level (heat protein coagulation) will be recognized around the spine.
Chiai muscle shows a relatively bright brown
It is whitish and burnt along the middle bone

We have issued the original tint

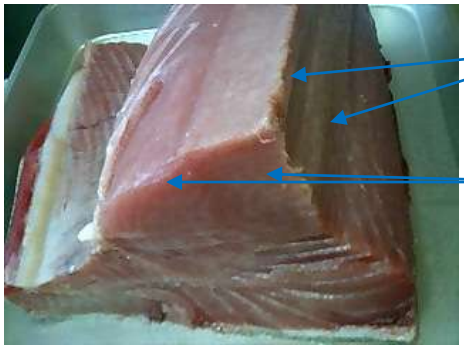
Examples of the above photo is the result of tuna of misjudgment as also a good senior quality ride of ultrasound on the seen there is a clear sense of oil. We had plans to unload in its own way of luxury restaurant because believe senior quality as a matter of course. Although the later findings of burnt was captured, because the overall evaluation quality entering the better, we've made the verification.



Tuna I seen burnt layer about 5 mm thick of level

It admitted to turbidity and Sakanawa disappearance
Chiai muscle acknowledges muscle interval of penetration in bright brown

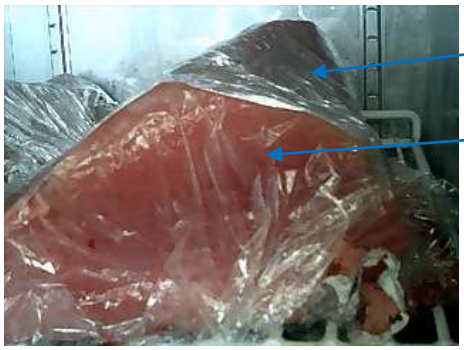
And 10 ml of the deep ocean water Gmo to sterilization seawater 10 liters (10cc) adding the adjustment seawater were immersed in a kitchen towel, we compress the whole body
You are getting better is a missing of blood
No bleeding of blood from Chiai muscle



Part of burnt became pure white

Cloudy saw has been recovered transparent

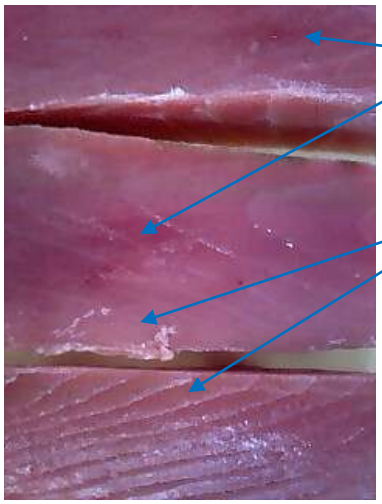
It will admit lost was unclear Sakanawa



It was burnt parts removal

Colored start

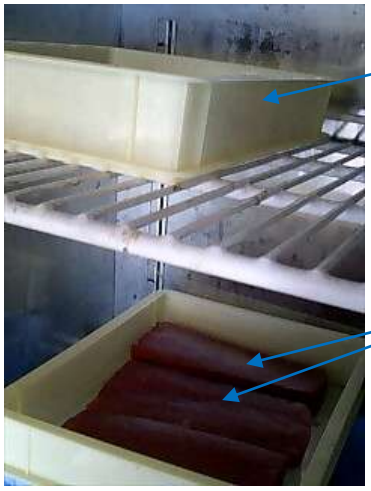
There while glue color



After 20 hours, it was cut in the fence. Seen has become amethyst color with a tint well become transparent feeling

Also you can confirm oil ride

Given the color in this situation, it was sprayed all over the whole of the solution obtained by diluting the sugar 20 percent corresponds to a 20% salt water



Tray takes a gradient method, took a storage method that attempted to drip of exclusion.

I Irodzukigami been this degree after 24 hours
Drip is not seen

We were shooting under bright lighting. It has become a shade, such as using chemicals

Chemicals are not used at all, the concentration regulation of salt and sugar, was further carried out such a coloring in the regulation of storage management temperature

Burnt tuna can not be used, it is considered a thing of the past. Tuna is a leading brokerage trader had described worth is determined by the hue.

Brighten the shade of black bigeye tuna meat

By the tint dark of November 26 bigeye tuna, has been missing colors In less than a few minutes seawater + Gmo preparation solution was sprayed on the entire 100cc.
We will store up tomorrow at a temperature management -2 ℃ blower air cooling

After spraying, and he has clarity varies bright and not stand even a few seconds

At the Chiai muscle is seen green strange
Clearly whether the boundary of the area come out tomorrow?

Photos at the time of 18 hours
It is getting back to the bright vermilion return is clarity
Have dropped to about 30cc of about refrigerator floor drip of outflow is seen

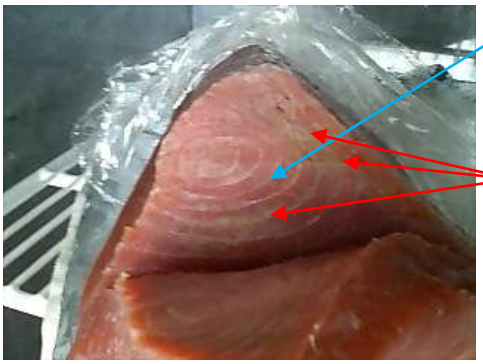
Chiai muscle from the shade of smoldering gray, has been recovered to dark red hue came out transparency

Funk has been missing as compared to yesterday.

Additional 24 hours after 6 hours
Tint will have become even better

It looks whitish in the ride of oil

Drip in like taken almost missing, and long-term operation ship tuna distinctive flavor



The inside of the shade has been improved
I will admit the green pigmentation

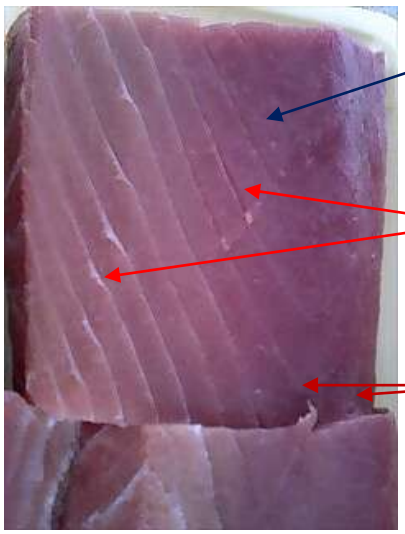
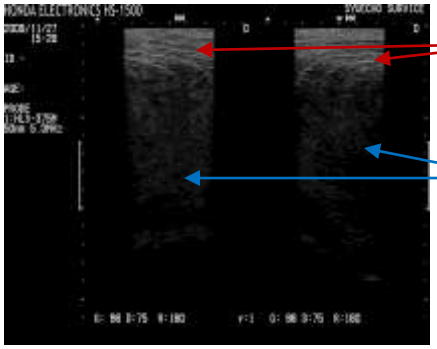


Photo under fluorescent lights
We have come back to fresh shades that this way transparency

I will admit only cracking slightly. Interference of seen good

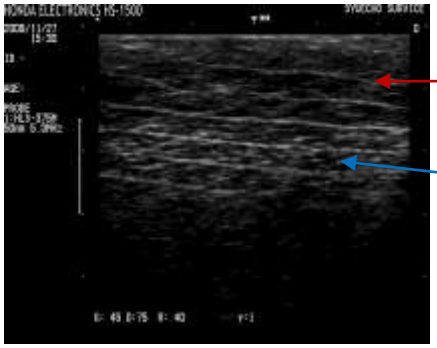
I admit some of the green dye.

The ultrasonic inspection process after bigeye



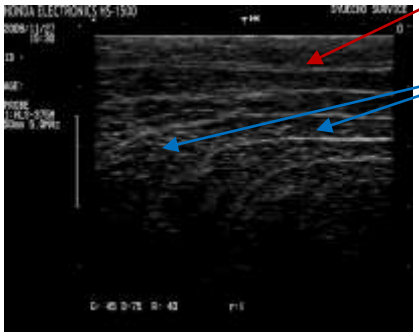
Spine contact portion is observed in the echo Gee Nick

Inside it will be seen in the relatively delicate uniform echo



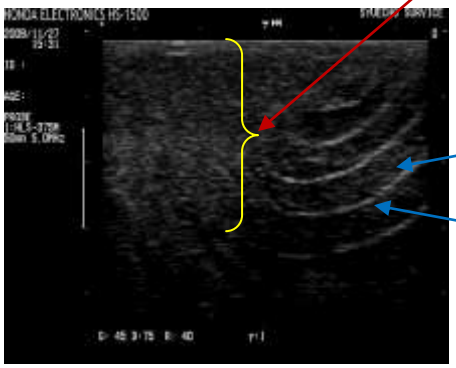
Muscle fiber shows the obscure wavy irregular hypoechoic

Suji seen a smooth equal clarity, acknowledge the chronic point-like echo hate it shows the preservation of muscle fibers



Muscle fiber is unclear muscle interval shows the relatively conserved hypoechoic

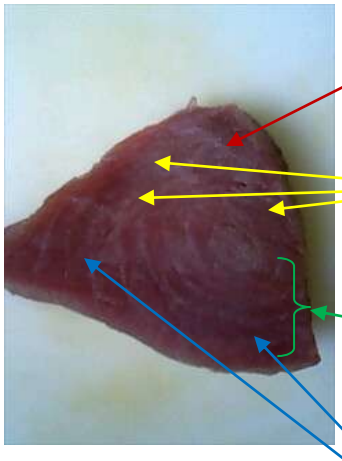
Suji seen a smooth equal clarity, acknowledge the chronic point-like echo hate it shows the preservation of muscle fibers

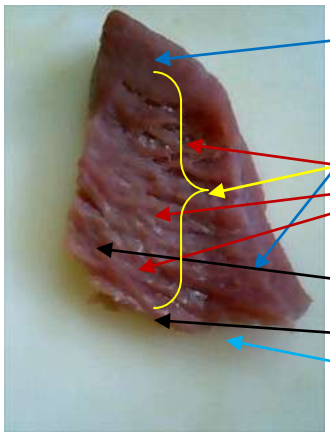


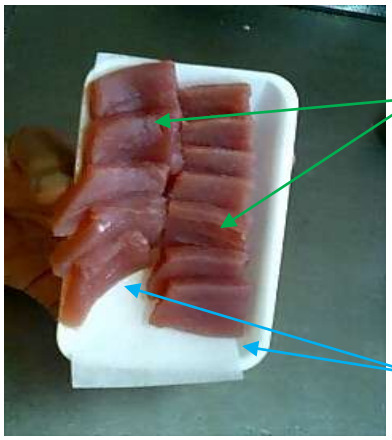
We will admit the echo Gee Nick area inside the invasive spine from the contact portion

Storage stability of muscle fibers good

Streaks are observed in the smooth and evenly orderly







Spine contact portion has sores is only

It is seen a border

Since this area is good shade in the firm saw quality I've cut this part to sashimi

Seen there is a shade better clarity

Partial matching the echo when Nick area

Seen it was not possible to cut into sashimi and sores, drip are fully missing

Spine contact portions

Chiai muscle side

No bleeding of drip

Complexion well, it has been cut to a delicious sashimi

No bleeding of drip

This bigeye we have been evaluated in quality, which is said to be long-term can be saved is the a is generally burnt not ship tuna. Reduction of echo Gee Nick layer and significant ultrasonic transparency of tuna around specific spine and burnt on the ultrasound observed that was seen, and to the ultrasonic connoisseur on burnt from that area that actually match had sores It is reasonable. Burnt to ultrasonic connoisseur terms are not.

Taste thin but muscle fibers I feel delicious so good hue are stored. Color blur due to the temperature change is small. The textured evaluated by five people, and has been determined to be delicious.

Process for providing a safe tuna eliminates the bacteria

The most problematic bacteria of Hiroshi fish shellfish include the Vibrio parahaemolyticus. In tuna, but Vibrio infection is relatively low for, tuna bacteria is easy to breed if bad is high storage environment nutritious. In particular, it notes the secondary infection of Vibrio parahaemolyticus. Tuna it will start the process as if it were infected.

Make the tap water washed with clean environment tuna. Eradication of basically almost Vibrio parahaemolyticus in this we will have done

But it will do the decontamination of the surface at the germicidal lamp in further cold storage management because there can be no perfect. Germicidal lamp use will impair the well of care not a processing worker health, especially since you burn the eyes, and need never be without the exposure of the skin and that it does not work with the naked eye. Drying also conjugated with, but many bacteria will die, if you sprayed about 5 minutes sterilization irradiation at a distance of 20 cm the surface of each of the tap water and

Gmo mixture because the skin also burned to death (thousand-fold dilution) .

 It sterilization irradiation in a state that was further and at the fence.

It does sterilization process again in a state of being plastic pack at the time of shipment.

The Hong Kong exports to Tamiemaru, Michimaru, Motomaru, it indicates a much round, data of Fukumaru Hitoshi Itoman

CERTIFICATE OF EXAMINATION

No.2009-B 03505 – 01 24DEC 2009 Name of Shipper Marusan Co_Lt.a

720 Ixxxxa Uxxxe citv Oxxxxa

Minister of Health, I,abourand Welfare Registration Inspection Agency

Under The Food Sanitation I,aw

720 Kyouzuka, Ura80e City, Okinawa, 901-21

0IqNAWA PREFECTURE ENVIRONMENT SCIENCE

Telephone: 001·81·98· FAX: 001181-98

This is to certify thatthe sample received on 22th I)ecember 2009 has been duly examined by our laboratoryandthe results are as follows:

Name ofApplicant Name of Goods Captured Area and Date Quantity and Weight Number of Sample Date of Examination Item or Examination MetlIOd or Examination Results Remarks Marusan Co.Ltd

Yellowfin Tuna CWhole)

East China Sea (22 DEC 2009)

5 Carton Net,150kg One

22 · 24DEC 2009

(a)Vibrio p arahaemolytieu S (a)No Vlbrio parahaemolyticus was found per 25 gram.

O))Mercury contents : 0.34ppm

(a)Enrichment method,using theAlkaline Peptone Water

O))Under testing by the AtomlC Absorption Spectrometry.

Y.Yamada

OPESC, DlreetOr

Quality improvement by temperature control

1/18 Minatogawa catch albacore tuna 24.5 kg example

01/18 8:00 vascular four places cut the tail to dress processing and it bled processing start

1/21 was loin cut. Of moisture rather than the booming of blood coming out good. Aroma there is only quality also transparent feeling fresh smell, thin tint

For block cut -7 ℃ air-cooled storage immediately after the start of the colored (01/21 10:00)

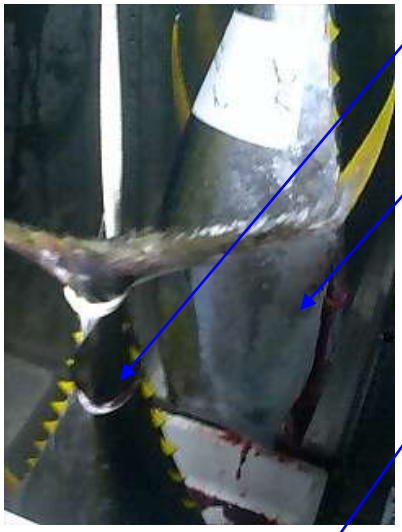
Yellowfin tuna 10 kg class hanging bled test

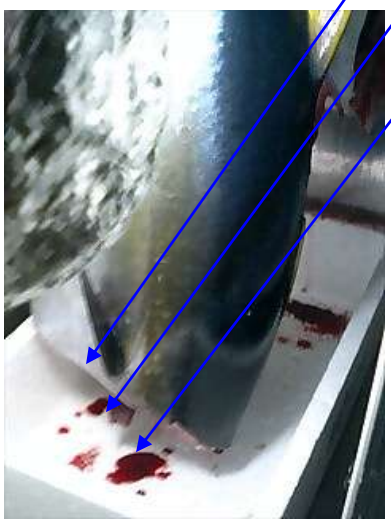
ShuzouArakakiultrasonic laboratory experiments start March 9, 2010 URL https://syuzou.awk.jp

Hanging bled, deep water Gmo spraying, air blast -2 ℃ hybrid processing small size test 20,100,309 start

The Harawata head removed immediately after dropping 1 Seri

Photos hanging 8:00 processing start





4 places purse cut to tail

Two both in stock Gmo1cc spray in the spray treatment

While it is deep sea water iced day take-away just in case

Spray treatment

Belly open

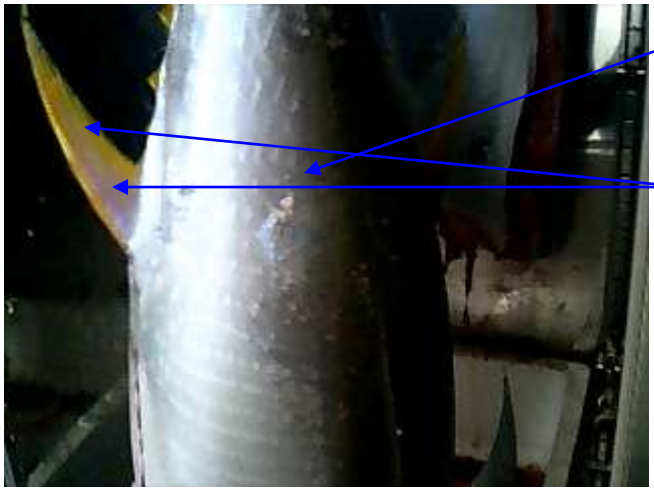
Kiln, leaving head cut

Blood came out

Fresh blood of the tint vivid and dark vermilion

24 hours

Emission amount of water 60cc (total 170cc)



Skin that has been dried, tuna pattern is preserved

Good fin shades

Initial discharge blood changes in the shape of coagulation gel

Clear vermilion of kidnapping and blood began to appear. Fishy smell can not feel

After 48 hours approximately 30cc discharged now (total 200cc) 1% emissions commission 99% per weight. Drying also will be calculated taking into account the commission 95%.

Discharge of clear water in the wine color has continued

Tuna pattern is saved

Sanguinariness will not be felt

Tuna pattern has been securely stored

Toro parts by opening the belly (oil is not riding) elasticity in shades bright vivid vermilion is saved

48 hours

Stored tuna pattern

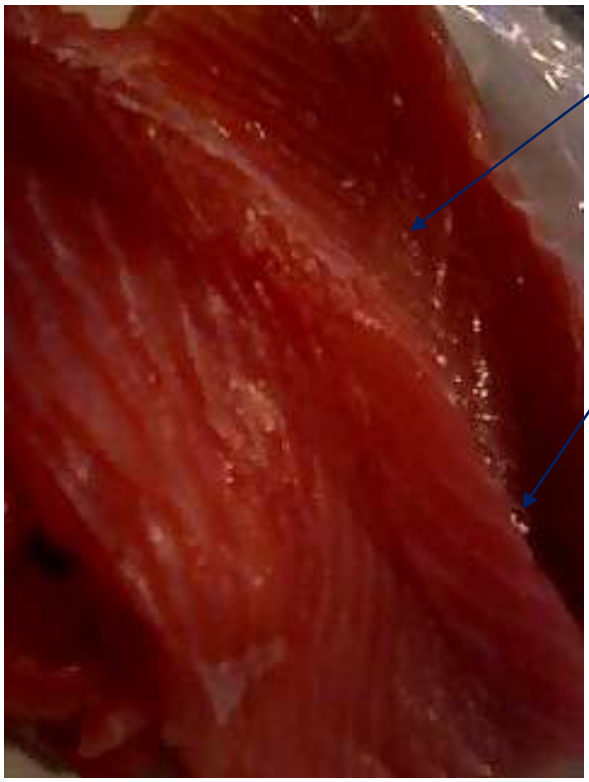
It started discharge blood slightly hemolysis turbidity
You do all the washing treatment with tap water

Germicidal lamp for 10 minutes
This will burn reliably eyes just stared for about 30 seconds in the UV-c germicidal lamp that has been used for the sterilization of operating room medical field (like me amateur was working a day welding with the naked eye level)

Tap water cleaning

96 hours after

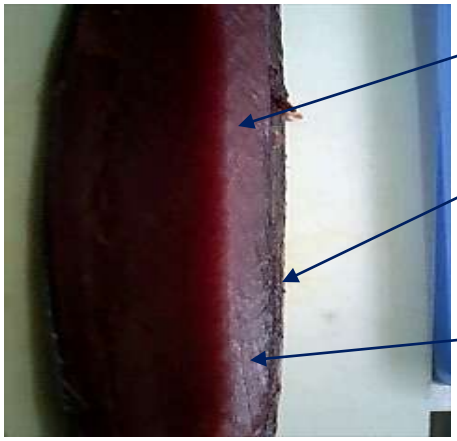
Remaining off Reppa is conceive photo after shipment (in household refrigerators)



Yellowfin tuna and exudes a unique vivid bright vermilion

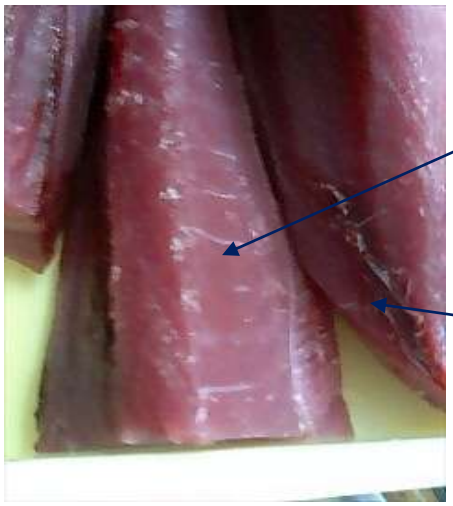
Cut edgesharp

After 120 hours the next one (before and after the course seven days from the time of capture)



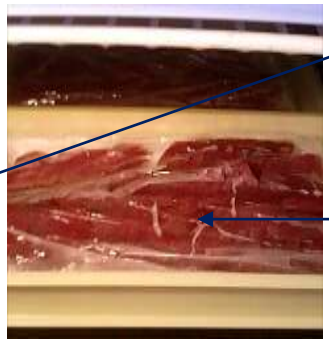
Cut Sharp
Dark brown still state and excess moisture was asleep not breathing I'm missing
Chiai muscle
It can not be seen oozing of blood

Mi-shitsu the muscle fiber state of preservation good has been firmly



Observed in white fluorescent lamp
Smooth surface without disturbance of spots and uneven wear

It can be confirmed that the main vein is penetrated toward the center portion by penetrating the body substance



And processed into mince This processing for the people of the liquid diet

They were laminated to each other and cut into sashimi to not excessively oxidized.

General Council of Trade Unions of Japan

Shipment In this sashimi cut, get a quality improvement in the post-processing carried out in Kimejikurasu is seen a spill none of the drip (without most of the fishing boats there 10 kilometers gills belly caught in bad weather forgo fishing bled processing Kimeji) things I can. It is possible to set the retention period of the extension about two weeks of delicious eaten period by going further stacked the processing precision management techniques.

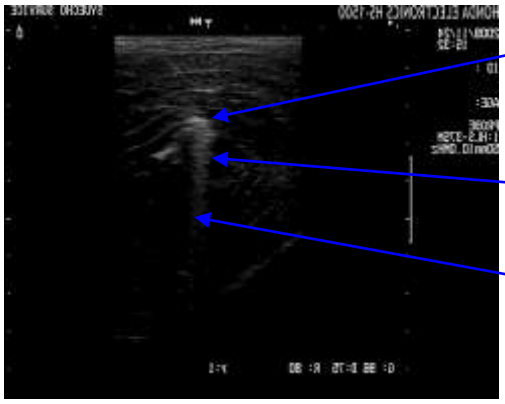
Ultrasonic observation only burnt survey

3 million pixel monitor HDD recorder

Ultrasound probe

Raw yellowfin tuna back Simo block

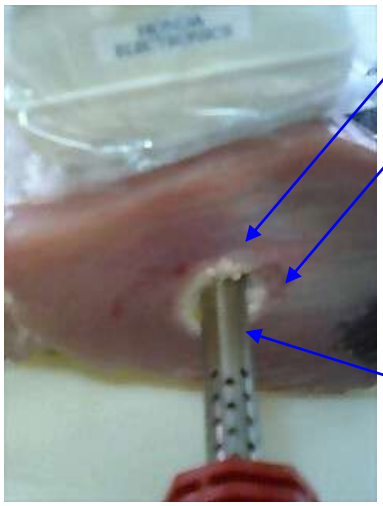
Soldering iron



Strength reflected echo of baser iron boundary surface

Multiple reflection echo generated by the soldering iron double structure

Echo by the soldering iron can be seen in direction echo is Association

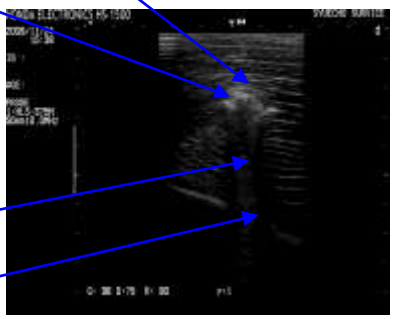


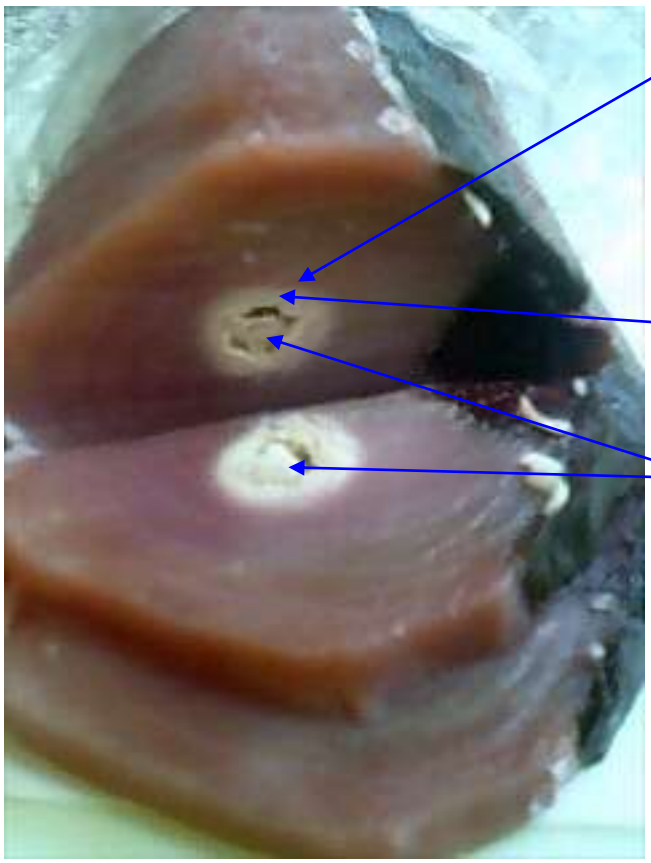
Strong burnt formation about 3 mm

The invasion burnt in the transverse direction as well of about 3 mm width

Soldering iron center

No echo area is also enlarged by the infiltration of burnt



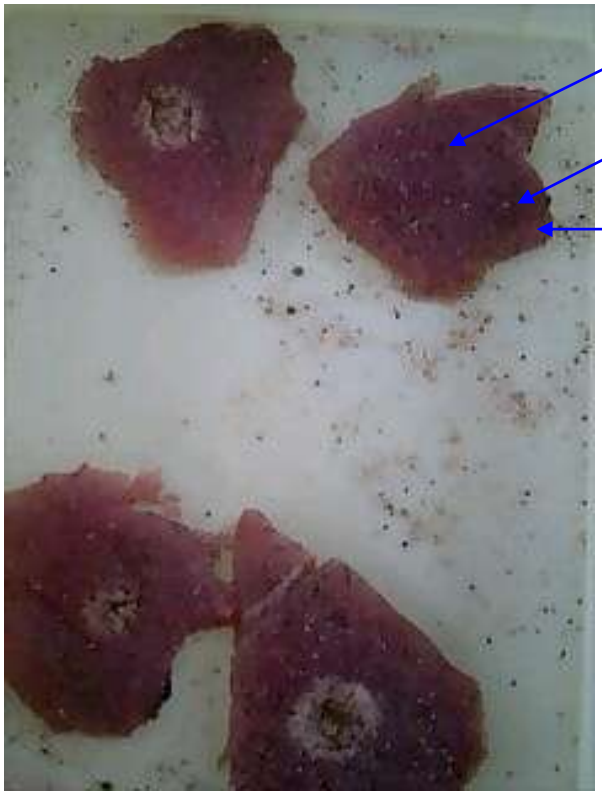


Interface is sharp appearance Ultrasound on this boundary are not captured

Actually boundary surface that captured

Part of depression has been plugged in horizontal bar of Mi-shitsu center was in the shrinkage is burnt with a soldering iron

To make a tuna raw jerky because Mottainai



Roughing pepper

Salt

Sugar

Since became beautiful by coloring After piece cut after the experiment, is to quit throw away, we turn to tuna ham processing experiment. We can skip the water for 24 hours at chilled air, and finished with cold smoked in subsequent hickory smoke.

Fresh fish stocking from Ogasawara、It is an ultrasonic nondestructive testing as for Etelis coruscans.

Ogasawara shipment → shipping service on September 5

Tokyo arrival on September 6
Midnight, September 7(It is about 9:00PM in the explanation of the XX transportation).
It receives it at 5:00PM, September 8th.

1 State at receipt

①Variola louti

A State of remaining of ice
The state of preservation is in the state of the silver thaw and preservation is very good.
B Fresh fish's quality
It transports and it evaluates it ..color shine.. well very good.
C Remarks
It actually punctures while moving to the styrene. The melting moisture leaked and it went out.
As a result, the controlling effect of the water scorch was admitted high. When the water leak was generated because some were larger than standards and it overworked and it kept it in the refrigerator, the explanation was received. It is thought that it is length array keeping storage, and about two can be stored by the addition.

②Pristipomoides argyrogrammicus

A State of remaining of ice

The state of preservation is in the state of the water ice and preservation is excellent. Some water scorches were admitted.

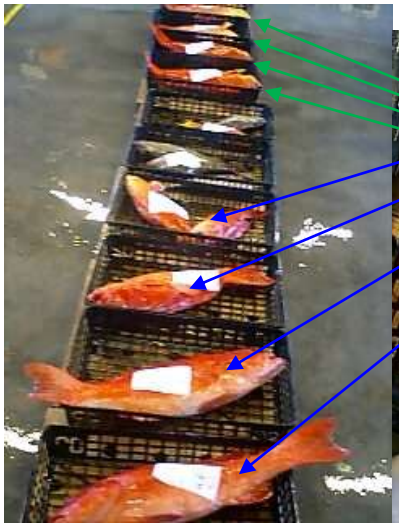
B Fresh fish's quality

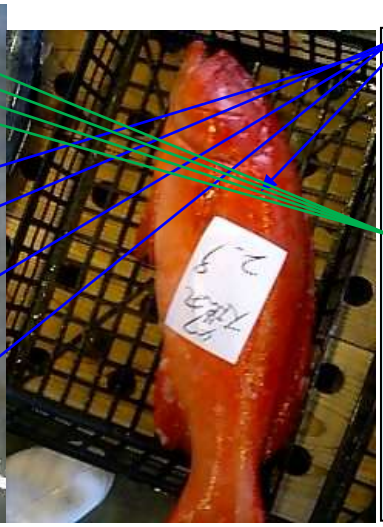
Very freshness good

C Remarks

The melt of ice is about 30 percent. It was seen with the water ice. The generation of the fresh water scorch by it is thought. It has recovered simply to a departure clear color by the deep water scatter. If the open melt water can be exhausted, the hole can be received in the styrene by the quality at the same level as Variola louti.

Variola louti shipment to XYZ wild variety of parsley on September 9It queued up in the wild variety of parsley.





XYZ Plectropomus leopadus of the neighboring waters

XYZ Plectropomus leopadus of the neighboring waters

Ogasawara the neighboring waters

The brokerage person's evaluation was thin, and the Auction market value is higher than X00 yen XYZ inshore one.

The price is yesterday's fishing of the rising XYZ Variola louti neighboring waters by one-kilo size.

Variola louti of the Ogasawara neighboring waters

The [ri] value cost the X00 yen higher than one-kilo size of XYZ while saying that it will not be easy to sell it because it was too large.

③ Etelis coruscans

A State of remaining of ice

The state of preservation is in the state of the water ice and preservation is excellent. Some water scorches were admitted.

B Fresh fish's quality

Very freshness good

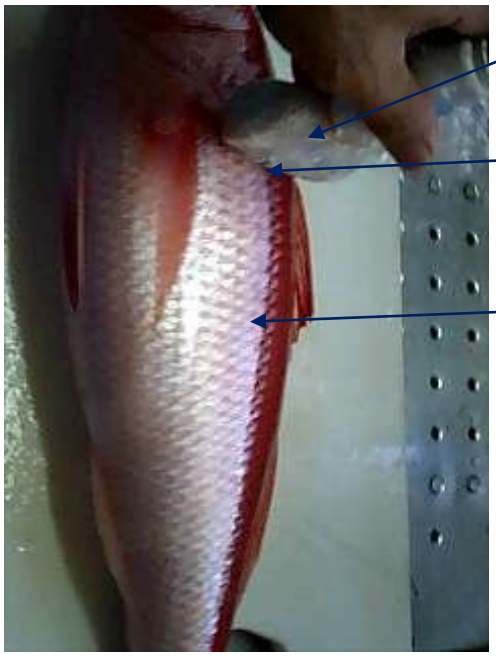
C Remarks

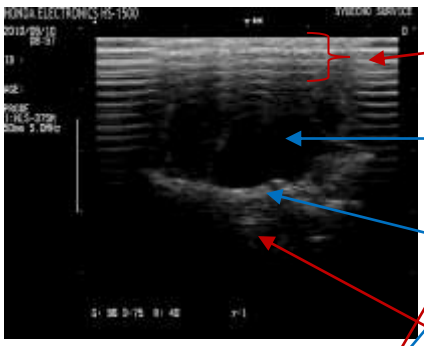
The melt of ice is about 30 percent. It was seen with the water ice. The generation of the fresh water scorch by it is thought. It has recovered simply to a departure clear color by the deep water scatter. If the open melt water can be exhausted, the hole can be received in the styrene by the quality at the same level as Variola louti.

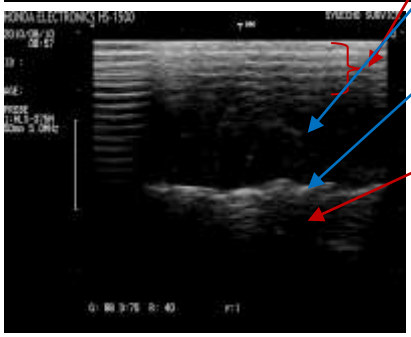
Remarks) The Gm0 stock solution atomization to Variola louti directly, and this shipment does the Gm0 stock solution to the freshness maintenance seat, sees, and has received the report from the cherry sea bream when paving the lower side and on, covering, and having shipped it.

Ultrasonic nondestructive testing of Etelis coruscans
Linear probe of frequency 5MHz of use device HS-1500 and Ogasawara landing 1.7 kilo in weight of specimen material Etelis coruscans

①Observation ..it is scale..







Linear probe

Inspection without jelly

It accumulates by the kind the circle tabular of diameter 0.2mm in thickness ten mm and the body of fish is covered with the scale closely.

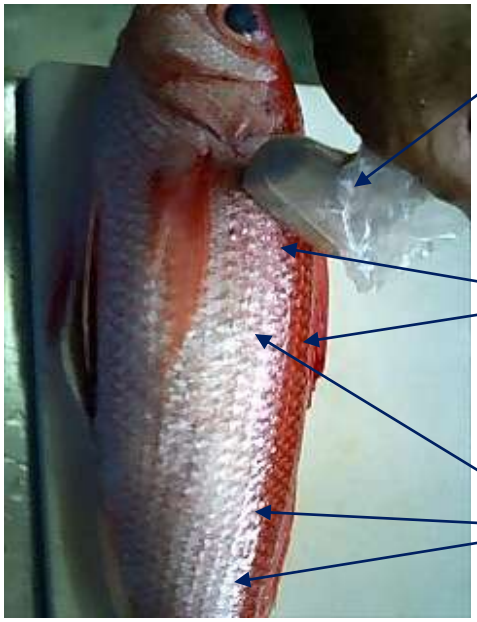
Multiple reflection artefact by influence of scale

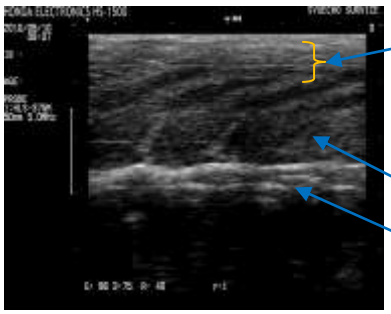
Muscular fiber is slightly observed.

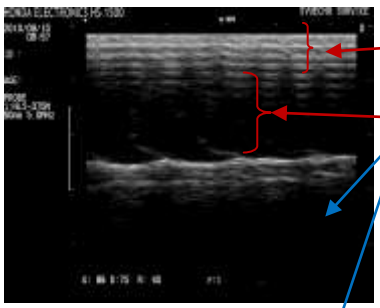
The reflection signal of an inside bone is admitted.

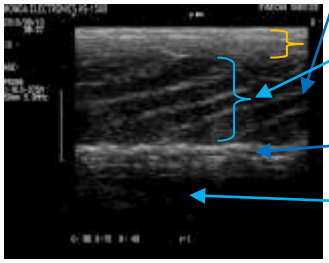
The rear side is observed from an inside bone by no echo.

②Observation that removes the scales from, and removes and processes Internal organs and the gills









Linear probe

The surface that removed the scales from is seen with no ruggedness Wave-like. If the scale is peeled off by the state that has stuck diagonally and deeply in the skin, the pause is caused like this.

The scale is peeled off enough.

The formation of the sound field becomes insufficient ..probe thickness.. depth to 7milli from the surface. When the digital matrix array is used, such a short distance artefact is not generated.

An inside bone that can plainly observe Muscular fiber and the muscle plate is plainly observed.

Happening artefact probe defective sticking by no ruggedness Wave-like on surface it

Minute Muscular fiber and the muscle plate cannot be observed by a defective ultrasound transmission.

Muscular fiber and the muscle plate can be plainly observed like this by the probe defective sticking by no ruggedness Wave-like improvement.

Boundary of Internal organs and body

The inside is caved and echoes no by the Internal organs removal.

Laboratory results

1 When Etelis coruscans is observed with there a scale without processing, it stays in the observation of the position level of the bone. Because the observation of the muscle plate and Muscular fiber was difficult, the evaluation of Fleshy substance was not able to obtain data enough.

2 When it removes the scales from and Etelis coruscans is observed, the observation of the muscle plate and Muscular fiber is appreciable enough. However, the (7mm) observation was difficult in slit type (1D) probe from the surface to the probe thickness deep. It is possible to observe it from the epidermal by lying and observing inclusion 10 level such as Mediation thing （kiteko）. Moreover, when 2D array is used, a free, wide observation is possible. In addition, when the multi frequency function is possessed, it is suggested that the reflection artefact of the scale be able to be controlled.

Inspection charge
Surroundings supersonic wave laboratory
The checkers Name ShuzoArakaki
URL http://syuzou.awk.jp/

For tuna shape and quality

March 24, 2010 ShuzouArakaki Ultrasonic Institute issued https://syuzou.awk.jp/

We expect the tint in the tuna of shape. It was kindly professor from the direction of Fisheries Cooperative Auction House in charge of Itoman

Photo left is elongated round　　Right flat back wide

Left to right, which is relish round shark belly tail of shape is tight elongated

Left slightly thin vermilion　　Right amethyst color with vermilion

Left is right to admit ride of oil admit the ride of mild oil

Quality connoisseur by yellowfin tuna compact shape

Left I seen in the somewhat flat shape that fat round

Left right of frost is seen relish the scars of shark are tight mild thinner

Flat ones taste take less of deep oil in deep vermilion After Sabai

Round thing many seen taste ride of oil subcutaneously and Harago in vermilion thinner is slightly sweet and delicious. Shark scars also greasy for about strong favorite whether oil of glue shark is as increases in proportion. By the way, the ratio is burnt in the right and left so as to obtain the different data.

The difference in missing the degree of blood case of hanging bled was observed.

Ratio basis 2: good tuna in oil of riding in about 3 have been obtained moisture is less data

It has not reached the confidence due to the small amount of data. It may be male and female differences.