畜産現場における安全性確保の取り組み

An Approach to Ensuring Safety at Livestock Raising Sites

山形県農業共済組合連合会 参事・酒井　淳一
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Hello, I am Junichi Sakai from NOSAI Yamagata.

First of all, I would like to make it clear to everybody exactly where Yamagata Prefecture is. This is because, while people in eastern Japan know about the Tohoku Region very well, I realized that when I come over to western Japan - as with my present trip to Kobe - many people don't have a clear idea where Yamagata is, or even about the location of Tohoku. So I've marked the places where I live and work on this map.

Yesterday, as I passed through Kyoto on the way to Kobe, I saw that the city was covered in snow. In Yamagata, we have heavy snow warnings and this snow has been the cause of a variety of disasters. However, when the snow melts and spring arrives, our cherries grow in abundance as this slide shows. In fact, Yamagata is the number-one prefecture in Japan for cherry production.

Regarding livestock products, Kobe is well known for its beef. Likewise, Yamagata Prefecture has its own specialty, Yonezawa beef, and we work hard to ensure the safety of this meat.

I work for Yamagata Prefecture Federated Agricultural Mutual Aid Association, a name which is abbreviated to NOSAI Yamagata. As in every prefecture, under the Agricultural Disaster Indemnity Law, NOSAI Yamagata handles the insurance of a wide range of products including livestock and buildings. Under the provisions of this law, because potential damage to livestock can be so large, in addition to offering livestock insurance, NOSAI organizations operate clinics tasked with preventing or limiting such damage. In Yamagata, we have four clinics, marked here in red on this map. At present, there are 56 vets in Yamagata Prefecture working against various livestock diseases and on damage prevention measures. This is the Chuo Kachiku Clinic (Central Livestock Clinic) located in the center of the prefecture. A total of 22 veterinarians are working here, engaged in improving the productivity of the local farming households and on damage prevention.

Let me introduce our system. The central testing system gathers together various test-related materials from the four clinics in the testing laboratory shown here. Two technicians are assigned to the laboratory. They receive specimen materials in the early evening and, by midmorning of the following day, send back the results data, almost complete, to the veterinarians who provided the specimens.

As you know, there are a wide variety of livestock diseases and our clinic works to prevent agricultural insurance-related livestock disease and damage. Farmers employ a variety of technologies to help increase their productivity but some livestock are unable to physiologically cope with certain technologies. Such animals exhibit a variety of symptoms. For example, in our area farmers rear enormous numbers of beef cattle. There is one production-related disease that can occur when the cattle are fed on concentrated feed. This is a disorder that, in serious cases, can cause animals to cough up blood. Such animals have developed ruminal parakeratosis - a disease characterized by a hardening and enlargement of the papillae of the rumen, as well as liver abscesses and metastatic pneumonia. This results in them coughing up blood.

Such extreme cases are not common but there is a period during which the danger of liver abscesses developing is very high. We work hard to decrease this danger as much as possible and thereby stop the disease from occurring. This ultimately helps maintain productivity in farming households to some extent. As Prof. Yoshikawa said earlier, unless the original livestock are properly secured, there is no food safety. At NOSAI, we promote various forms of management measures to improve livestock production and instruct farming households about best practices. Currently, in the livestock insurance business, individual medical examinations are the norm. But in reality we should now be using management systems for raising large groups of up to two or three thousand head of livestock. So group management methods, aimed at increasing productivity, are also being actively reviewed and considered. When we make our rounds we confer with JA staff and farm managers on a variety of issues. These days, it is becoming increasingly important for the various parties to mutually share information and confer with each other concerning what farmers should do according to the data on their cattle.

Let me give a rough summary of the work of our livestock clinics.

First is the diagnosis and treatment of disease. Within the livestock insurance business, payments are made depending on each individual's medical record (for individual management cases).

Second is health management and production maintenance. As I said earlier, we support large-scale cattle and pig farming operations so that they can maintain or increase their profitability.

Third is farm management. This activity is based on a solid law - the Domestic Animal Infectious Diseases Control Act - under which countermeasures against infectious and contagious diseases are taken by the livestock hygiene service center. NOSAI plays a cooperative role for this but we also take the initiative and actively proceed with farm management where necessary.

The fourth kind of work is marked here in red. Our clinics work under the Agricultural Disaster Indemnity Act. We compensate farmers for damage so that, even if a major disease breaks out at their farm during this fiscal year, production can be carried out again during the next fiscal year. This is one of our biggest tasks.

So far, I have been introducing the routine activities we carry out up to the present. But safety questions have recently been raised for a variety of different foods. As for food poisoning, these are listed in order from 1 to 5. In China, there have been cases where agricultural chemicals were found mixed with food or industrial-use oil diverted for human consumption, and there was a possibility of such products being imported into Japan. These cases became major problems, and I'm sure they are still fresh in your minds.

In the past, our livestock clinics were mostly engaged in conventional practice, but current needs dictate that we must do more. Society now asks us to secure the safety of food and livestock products. In this situation, we must give serious consideration to how we can ensure the safety of the livestock products delivered to consumers.

The biggest catalyst in motivating us to act was BSE. Even now this is still fresh in our memories. It was an extremely sensational issue and, because it directly concerned the general public beyond the scope of livestock farm management, we were troubled as to how to respond.

On this BSE topic I wrote about of the danger of variant Creutzfeldt–Jakob disease, a fear which was quickly conveyed to the general public via the mass media. It was said that if small children ingested the prions that cause the disease, BSE would develop as a result. As a consequence, many mothers insisted that their school authorities stop using beef in school lunches. Management dietitians therefore decided to completely eliminate beef from their menus. At the time, this information was huge and a big shock for us.

We were in a position to explain about the risks and possibilities at various meetings and we did manage to explain things so that the consumer representatives present were reassured and consumers could again feel safe about eating beef. Our beef cattle farmers told them that they did not use feed that contained bone-meal feed. Nevertheless, because beef contaminated by prions is indistinguishable from normal beef and there is no basic difference between beef and dairy cattle, the idea to discard beef in general became widespread. This was a matter of life and death to dairy farmers who responded by holding a march to publicize the situation, as shown on the bottom left.

Next came the big news that politicians had begun making visits to livestock farms. This was a cue for us to act and we realized that the social role of our clinics was now far larger than the original role stipulated in the Agricultural Disaster Indemnity Act. We decided to develop our activities in that direction. So to secure the safety of livestock farming, NOSAI Yamagata launched an initiative named the Food Safety and Health Management Project. It was designed on the basis of Good Agricultural Practice (GAP) - an idea for producing safe products from healthy livestock, as written here. As the project proceeded, we tried to popularize and entrench management technologies, and, in so doing we were finally able to offer produce that fully satisfied consumer demands.

There is another point I would like to mention in this context. As was already being questioned at the time, antibiotics and other drugs are present even in healthy livestock produce, and they can also compromise the safety of beef and other meat. For this reason, we try to get our farmers to use as few antibiotics as possible and to only administer antibiotics in appropriate circumstances and amounts. We will continue to monitor whether antibiotics are effective or not against actually occurring infections and diseases over the long term. When resistant bacteria do appear it is important to administer appropriate antibiotics and to minimize the amount of antibiotics by monitoring them. We have implemented a monitoring project to this end.

A major point for us in the business of food safety and health management is to carry out our social responsibility. When BSE occurred, the Ministry of Agriculture Forestry and Fisheries announced an official policy that animals should be managed individually, thoroughly and traceably. We have tried to carry out thorough individual management based on this policy. Also, since it is very important in the context of ensuring the appropriate use of veterinary drugs based on positive lists, we deal strictly with prescriptions from established medical organizations and ethical drugs. Moreover, in line with the revisions to the Slaughterhouse Act, we now have to certify each animal's disease history and medication records. We fulfill our social responsibility by doing this scrupulously.

I should also state that, in keeping with the GAP idea, we are introducing appropriate farm management techniques based on each farm's production process. The first thing we have to pay attention to is the safety of feed. Secondly, as I've just mentioned, because safe products come from healthy animals, we must pay attention to whether or not animals are reared according to healthy management practices. Even where these practices are being realized the possibility of disease is still inevitable, so we need to put management innovations into practice as promptly as possible to reduce the risk. Of course, if these practices impose a great a drain on the farmers they will not be able to continue in business so it is important for them to raise their productivity and maintain their operations while adopting such innovations.

In order to fulfill each of these roles it is essential to create a great volume of technical information, discuss things with farming households, and educate farm managers. This photo was taken over 10 years ago when we had just started our food safety and health management project. The farmers sitting there with their arms crossed couldn't understand what the lecturers were talking about. And we had no idea if the results promised would actually materialize after everything was put into practice.

Much later, there was the article in the Nikkei Shimbun

newspaper reporting that above-standard amounts of carcinogenic aflatoxins had been found in some Chinese-made dairy products. In fact, we had suspicions that this sort of thing could have occurred on any farm in any country, not only in China. As I mentioned earlier, in GAP too, we believe feeding quality technology should come first. So we have been doing research on that. Some representative mycotoxins are listed here. Among these toxins there is Aflatoxin B1 which gets into milk and is a possible carcinogen. Accordingly, we monitor whether or not such fungi or mycotoxins are present in feed.

Next, although this is not our own data, we have uncovered numerous food poisoning cases in which mycotoxins are thought to be involved. Some of the incidents are from quite a long time ago. Also, in 2008, there was an incident of fraudulently re-selling tainted rice which caused damage to production at many food-production and processing factories. Fortunately, no contaminated food reached consumers due to the incident but this was due more to good luck than anything else. How should we monitor and take countermeasures for such situations? In keeping with Food Safety Law provisions, the Food and Agricultural Materials Inspection Center monitors foreign matter and pharmaceutical substances within the raw materials of imported feed, including mycotoxins, pesticide residues, heavy metals, etc.

However, when we checked the law in detail, we discovered that self-supplied feed produced in Japan is exempt from these provisions and thereby not subject to inspection. There are agricultural plants producing self-supplied feed in our area and, when we have checked their feed, we have occasionally come across feed partly contaminated by fungus. As I said, unless the original feed is safe, the health of the animals eating it cannot be maintained. So it is vitally important to control any contamination by mycotoxins or aflatoxins which can transfer into milk. In our field, silage adjustment measures (as per 1, 2 and 3) are extremely important from a zootechnical standpoint. From our research we have found that absorbent agents can be effective when there is a possibility that an animal has unknowingly consumed feed contaminated with mycotoxins or aflatoxins. We developed a food safety project that encompasses this research.

One more thing I'd like to mention is our drug-resistance monitoring project. Sometimes drug-resistant stains of pathogens are produced, as shown on the right side of this slide. The antibiotic substances that can be administered to livestock are limited in certain ways. Also, they are used in large quantities on cattle so there is a strong possibility that drug-resistant strains of pathogens will emerge. This is why we are carrying out wide-ranging monitoring and we provide antibiotic usage information to veterinarians in charge of farms. By doing this, the veterinarians can change the antibiotic regime to one that is appropriate for each farm. For example, Ampicillin has been used on this farm. When we do start to use another antibiotic, the overall amount of antibiotic substances used on the farm can be reduced. We consider it very important to perform such activities on an ongoing basis to ensure healthy livestock products, and we have been carrying out this project for over ten years now.

On this next slide, I have listed some of the ways in which we should conduct ourselves in order to secure food safety in keeping with applicable laws and norms. The biggest item is the Food, Agricultural and Rural Areas Basic Act, shown on the left side. If you shift your gaze to the right, you can see the Codex standards, which are global standards, etc. Moreover, we have to pay close attention to continuing our practice by sensitively grasping contemporary requests and styles.

I'm sure there is no need to tell you, but let me sum up how the HACCP (Hazard Analysis and Critical Control Point) was developed. HACCP is a system developed by the Codex Alimentarius Commission, a body jointly established and operated by the FAO and the WHO, and it is promoted globally. In Japan too, after the occurrence of BSE, the MAFF actively recommended introducing HACCP in order to improve the safety of food and farm produce.

I will explain the differences between conventional

production inspection methods and the HACCP method. Roughly speaking, with HACCP, in order to specify the important management points for predicting potential harm in the production process and preventing it from occurring, each process is recorded and appropriate countermeasures implemented. On the other hand, with conventional methods, safety checks are made by making sampling inspections on the finished final products after they have been through all the production processes. So the biggest difference is that, under HACCP, all processes are monitored. In the pattern diagram for HACCP, checking for potential harm and important management checks are performed for each process. This means that any problem product can be removed at any stage, as it is detected. As such almost all of the final products are OK for shipment. Under the conventional method, most problem products are not detected until the final inspection. This is a major difference.

Now, for food safety and farm HACCP that will ensure improved safety of the food dispatched to consumers, HACCP checking mechanisms must be carried out for all processes. So on our production sites we are looking at how we can best fulfill our responsibility to ensure product safety through HACCP.

There are many different ways in which products can be harmed. For example, in the dairy industry, we check whether products have been affected by bacterial contamination and propagation, or antibiotic substance contamination, and whether detergent or fungicide has contaminated raw milk. In the case of fattening cattle, we check for body surface contamination from food poisoning pathogens and for antibiotic residue. The government continues to prohibit bone-meal feed, which was linked to BSE, so we also check for that kind of contamination. In pig farming, we check that no syringe tips have been left in the animals' bodies as these can also cause harm. So a condition of no harm means that the products are free from all of the above problems.

By putting farm HACCP into practice consistently it is possible to ensure that almost all livestock products are OK.

Based on farm HACCP, NOSAI Yamagata consulted with the prefectural government. Then, in cooperation with a variety of prefectural and JA bodies, we organized the Association for Promotion of Food Safety from 2006 to 2009. However it proved very difficult to run the association because the related parties were slow to act. Consumers were not represented and no change in mindset had yet taken place. For example, participants would make such comments as: "What are the benefits for farms? The labor costs are too high so it won't balance out." "Differentiating between types of farm management is just another way of saying that incompetent farms should close down." "Who will take responsibility when abnormal products are dispatched from certified farms?" In addition, the participants asked NOSAI to take on a leadership role. So, although we ran the association for four years, it did not progress to sufficiently build an active system.

Against this background, the MAFF decided to introduce HACCP systems for farm units. The goal was to increase the number of farms using such systems from 2,000 in 2007, to 5,000 by 2013. I have heard that about 2,600 farms have introduced HACCP systems so far.

The MAFF has conducted various trials, issued notices and announced a farm HACCP certification standard, which is shown here. Since this robust standard was compiled the members of our association - who were previously dragging their feet - have begun to move some way forward.

Moreover, in September 2011, upon receipt of this certification standard, the Japan Livestock Industry Association (JLIA) resolved to launch a Farm HACCP Certification Association in order to actively promote certification. Under the farm certification system, the association issues a permit to a certifying organization that that can certify each farm's level of compliance with the standard. When livestock farms make HACCP certification applications, this certifying organization grants the certification to those they judge to be complying with the standard. Finally, the organization

notifies the Farm HACCP Certification Association that it has granted certifications to specific livestock farms, and the association makes the award public.

In line with this system, we decided to rise to challenge again for implementing farm HACCP. We have made progress to the point that 55% of dairy cooperatives in Yamagata are now employing the Farm HACCP system. We conduct harm analysis and management and are mounting a response to each of the main sources of harm. Regarding the writing of checklists, recording daily activities, etc., we have held numerous meetings with dairy cooperatives and farm workers. However, regarding certification screening, we are still in the process of selecting judges. Also, we decided to use certification levels divided into gold and silver certifications because, if we set too tough a standard from the beginning, most farms would have great difficulty in satisfying it. So the silver level covers a host of general issues including food safety, pharmaceutical and health management matters, while the gold level satisfies the requirements recommended by the Japan Livestock Industry Association.

Since Yamagata Prefecture has only just begun to re-tackle this issue, the biggest effects of the efforts are still to come. Since the appearance of BSE, Niigata Prefecture has responded steadily over a number of years to employ farm HACCP. Niigata is acting strategically. Currently the prefecture is actively promoting this certification system so that all farms that produce milk, beef, pork, eggs and poultry will take part. The details are as written on this slide. The system has its own certification committee members and the prefecture carries out high quality promotions.

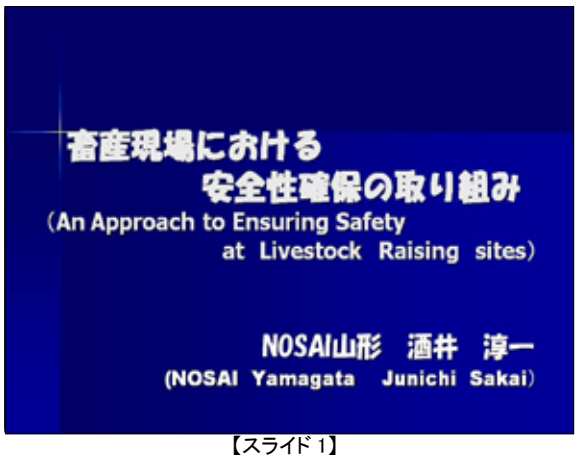
In Shimane Prefecture too, there is a certification system called the Bimi Shimane Certification. According to the article shown here, what is most notable is that it is not primarily the production farmers attempting to gain this certification. It is the students of Shimane Prefectural College of Agriculture who are seeking it. To have young people, who are aspiring to become production farmers, embracing this system is something that augurs well for the future.

In addition, veterinarians from the Farm Supervising Veterinary Medical Association and the Japan Pig Farm Practice Veterinary Medical Association have formed groups and are developing activities aimed at promoting farm HACCP. But the problem is that there are presently around 24,000 dairy farming households and 80,000 beef cattle households. They are producing this much produce and raising this many head of cattle. The MAFF is aiming to certify 5,000 of these farms within 2013, but their actual promotion levels and activities for achieving food safety in a real sense seem to be at odds with each other.

Finally, when we look at the issue of how to secure food safety, it is obvious that consumers must be involved and should also bear some of the costs, while a practical system must be constructed and the certification levels unified.

I have a friend who is a Mongolian nomad. When I visited him in Mongolia quite a while ago I was conversing with him and some of his fellow nomads. There was one particular exchange I remember. I asked, “What do you do with sick animals?” “We don’t give them any treatment. We never have done.” “Why not?” “To eat animals beginning with the weakest is the essence of nomadic grazing.” When I head these words the scales fell from my eyes. In nomadic grazing, people make use of animals that grow naturally. While in the livestock industry, the animals are raised by people. And “people” in this instance doesn’t refer to livestock producers alone, but to society in general. In order to secure food safety, we need cooperation from society itself. Up until now we have only taken a few steps towards achieving the goals, so at our production sites we are continuing to make efforts towards realizing them.

Thank you very much for your attention.



【スライド 1】

【スライド 2】

【スライド 3】

【スライド 4】

【スライド 5】

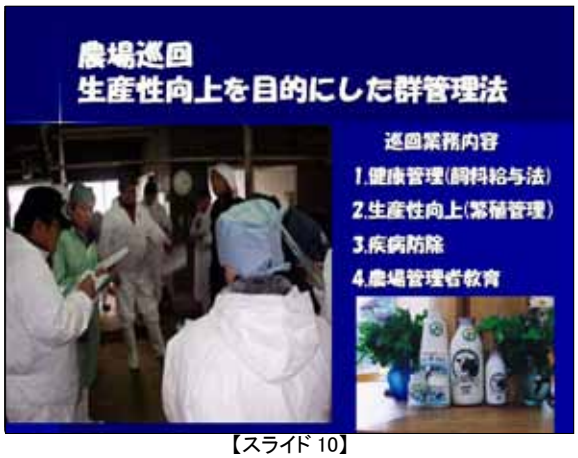
【スライド 6】

【スライド 7】

【スライド 8】

【スライド 9】

【スライド 13】



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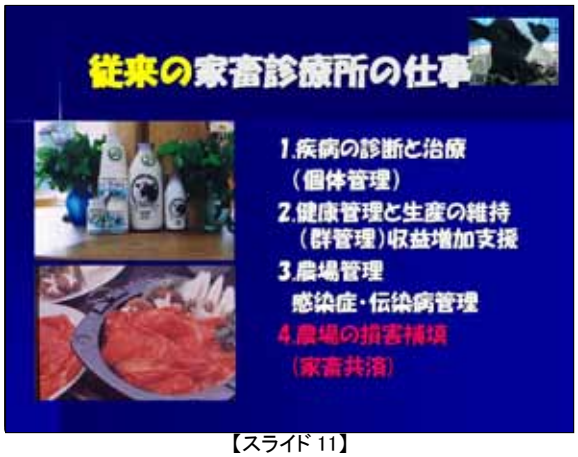
【スライド 14】



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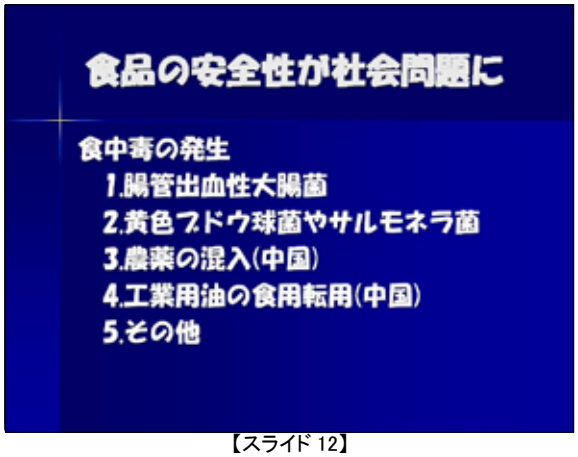

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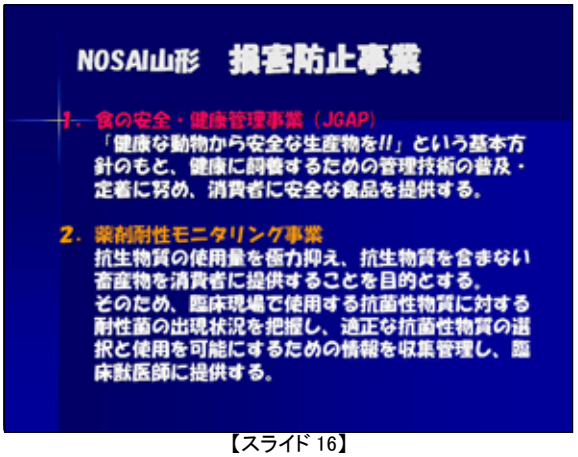

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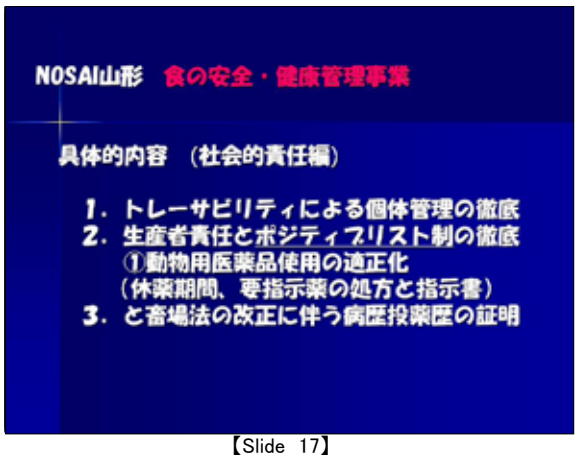

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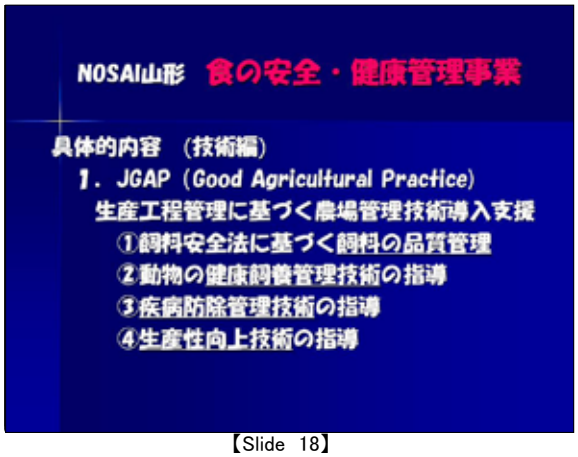

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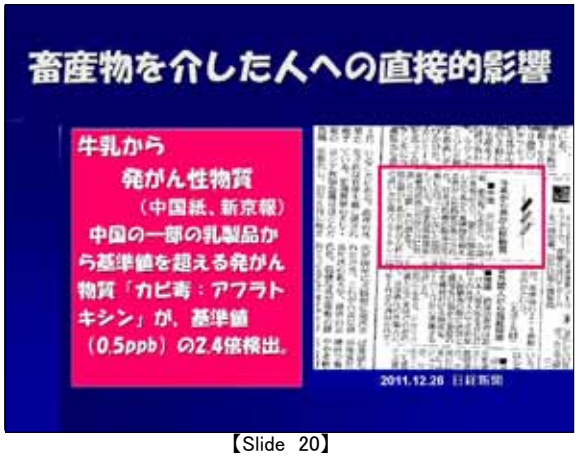

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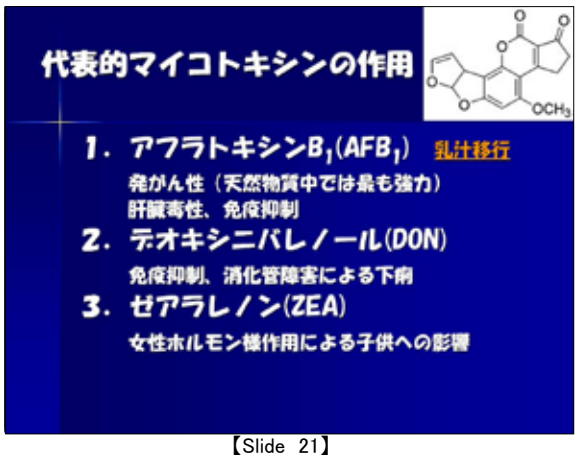

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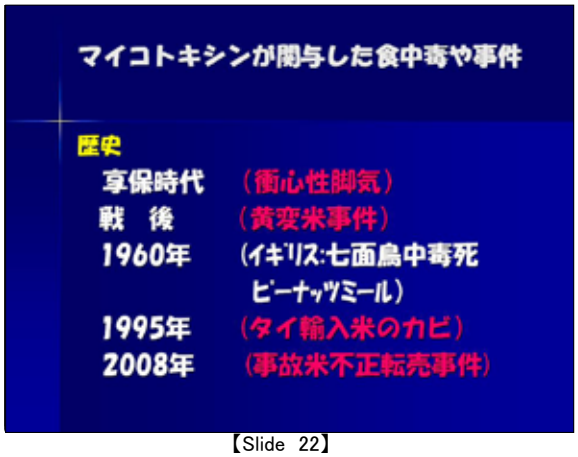

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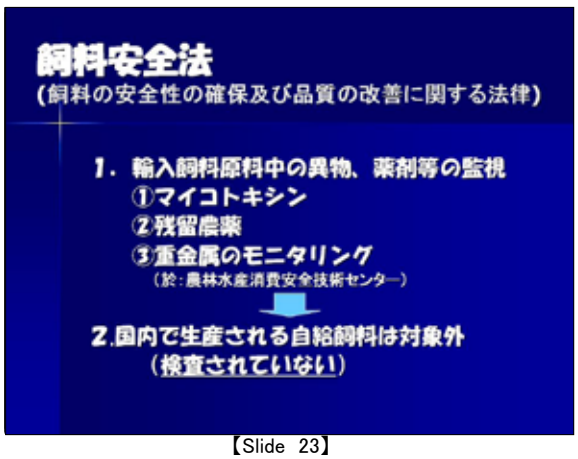

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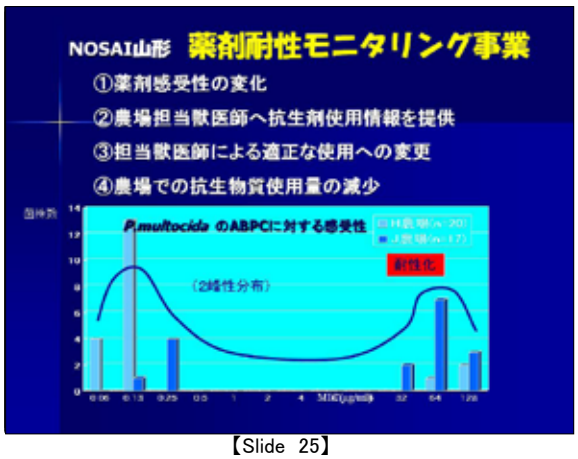

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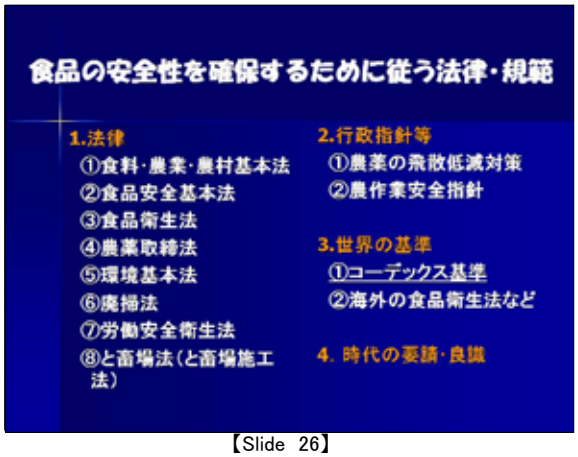

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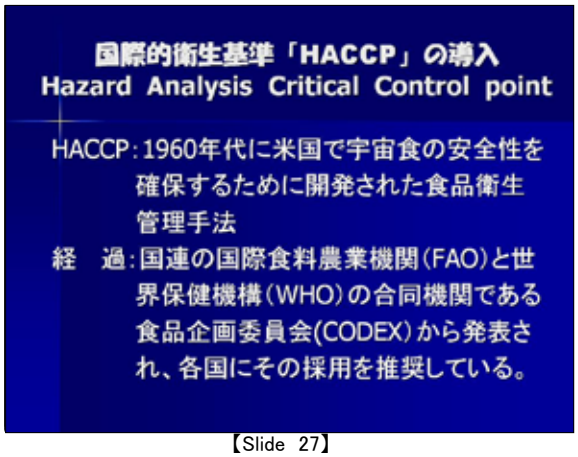

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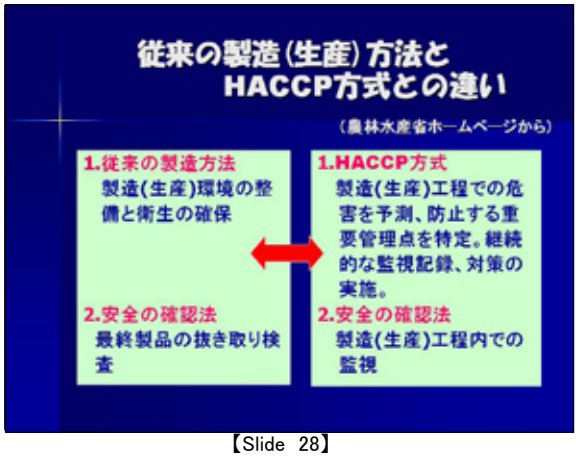

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【Slide 31】

【Slide 32】

家畜共済事故低減・食の安全推進協議会

【目　的】　安全な畜産物の生産
「認証制度」の確立
【期　間】　2006～2009年度
【主　催】　NOSAI山形
【参集範囲】　県（本庁関係課・家保・普及所・食検等）、
JA、専門農協、畜産協会、牛乳協会、
獣医師会、共済組合等

【Slide 33】

関係者の重い腰
・・・ 消費者の存在がない

1.農場のメリットは何？
2.労働力やコストがかかり、収支が合わなくなるのでは?
3.農場間に差をつけることは、廃業を早めることになるのでは？
4.認証した農場に異常が出たときの責任は誰がとるの？
5.誰が、リーダーになるの?

【Slide 34】

「HACCP」
畜産農場も導入の動き活発化

HACCP方式導入農場の拡大を目指して

（農林水産省 動物衛生課）

2007年	約2，000農場
2011年	約2，600農場
2013年	5，000農場

(参)2009年　「農場HACCP認証基準」

【Slide 35】

農場HACCP認証

1. 農林水産省 消費・安全局（2009.8）
「畜産農場における飼養衛生管理向上の取組認証基準」を公表
（農場HACCP認証基準）

2. 農場HACCP認証協議会（2011.9）
畜産農場の認証業務を協調して推進

【Slide 36】

農場認証の仕組み
（農場HACCP認証協議会）

【Slide 37】

再チャレンジ
農場HACCP導入支援

【業　種】　酪　農
【実施団体】　YY酪農業協同組合
【組合員数】　116名
【県内シェア】　55%
【技術支援】　NOSAI山形
【目　的】　安全・安心で高品質な生乳生産
⇒付加価値向上(一目置いてもらおう!)
⇒PB牛乳の販売

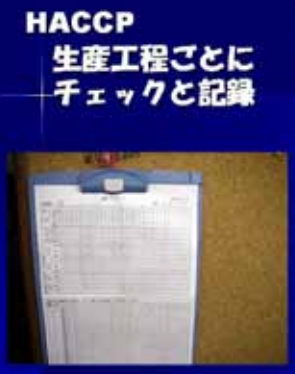
【Slide 38】

危害分析と管理（HACCP）

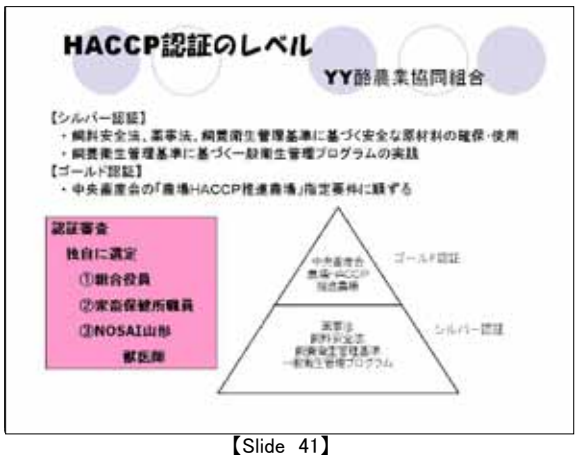
1. 生乳の安全を脅かす危害を選び出す
①細菌の混入と増殖
②抗生物質等異物の混入
③洗浄剤・殺菌剤の混入
2. 危害に対する重要ポイントの決定
3. 生産工程内でのチェック⇒確認と記録
4. 記録の整理、保存

【Slide 39】

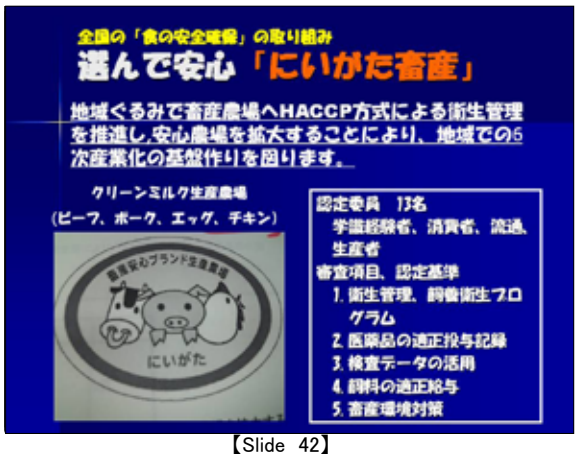
HACCP
生産工程ごとにチェックと記録



【Slide 40】

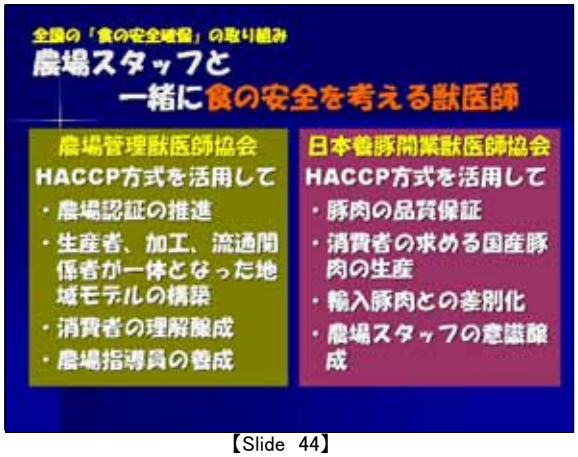


【Slide 41】

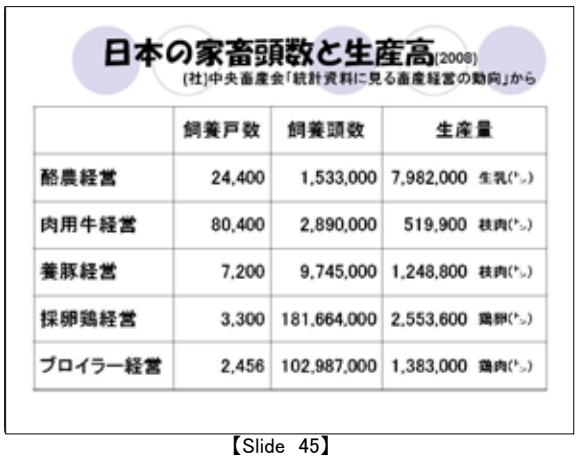


【Slide 42】

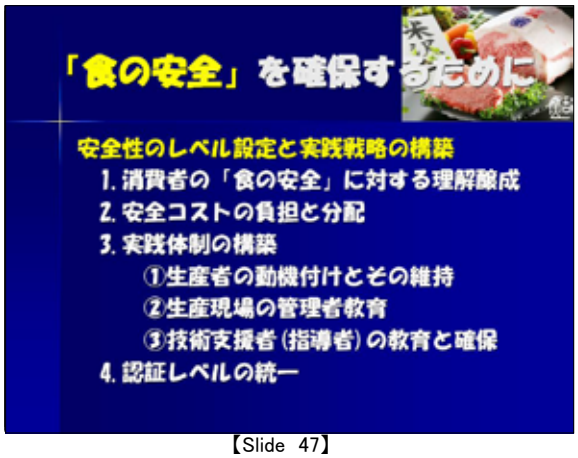
【Slide 43】



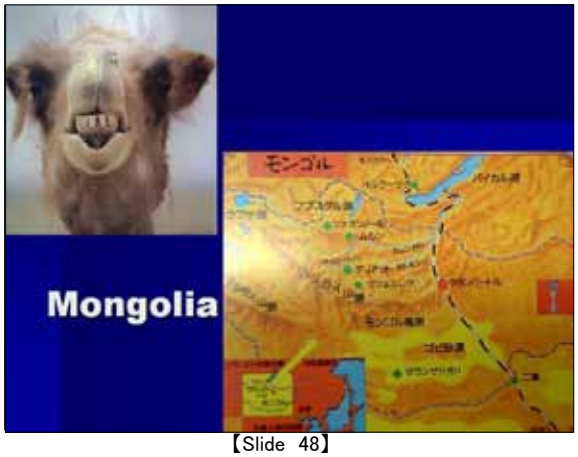
【Slide 44】



【Slide 46】



【Slide 47】



【Slide 48】

【Slide 49】


【Slide 52】

【Slide 50】

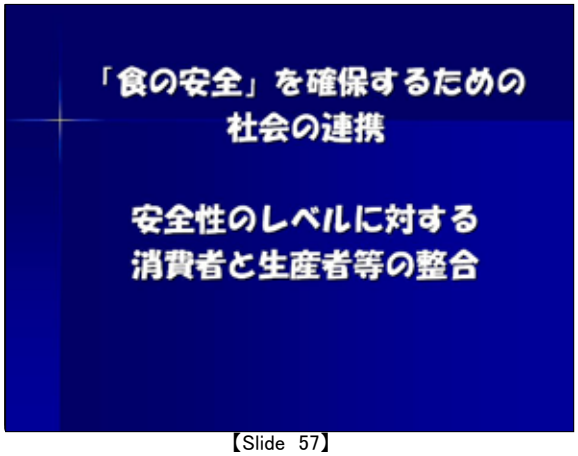

【Slide 53】


Slide 51】

【Slide 54】

【Slide 55】

【Slide 56】



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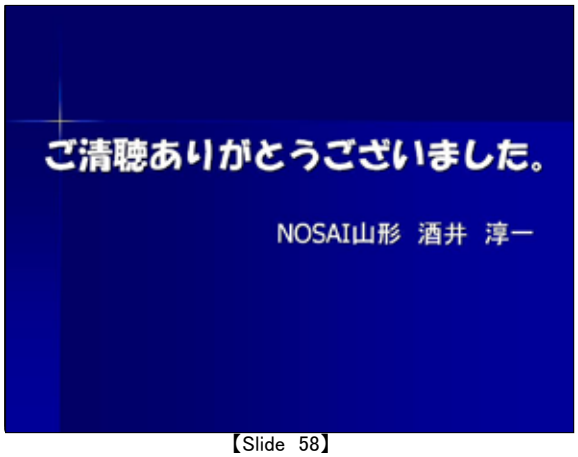

【Slide 58】