Description

Title of Invention: INFORMATION PROCESSING DEVICE, METHOD, AND PROGRAM

Technical Field

[0001]

The present invention relates to an information processing device, method, and program, and more particularly, to an information processing device, method, and program which can provide an index which allows safety levels against health damages to be judged comprehensively.

Background Art

[0002]

In recent years, stricter hygiene management is being demanded of eating and drinking places, dining rooms of business establishments, food factories, and the like.

[0003]

To meet the above-mentioned demand and prevent food poisoning in eating and drinking places, the present applicant has proposed a hygiene management system which can score and comprehensively evaluate a state of hygiene management in the eating and drinking places and their employees, information on bacteria, and a state of

hygiene management from the customer's viewpoint, respectively (see Patent Literature 1).

[0004]

Also, since the nuclear power plant accident caused by the East Japan Great Earthquake Disaster, there has been growing anxiety about radiation in environments and there has been growing concern over the radiation dose contained in agricultural products as well.

Citation List

Patent Literature

[0005]

Patent Literature 1: Japanese Patent Laid-Open No. 2010-287166

Summary of Invention

Technical Problem

[0006]

Conventionally, there are individual standard values for bacteria, additives, and radiation doses with respect to hygiene levels of eating and drinking places, business establishments, and other facilities, and workers thereof as well as foodstuffs such as agricultural products and foods processed and manufactured using these foods.

[0007]

However, there has been no index used to comprehensively judge safety levels (security levels)

against the risks of various health damages such as described above.

[0008]

The present invention has been made in view of the above circumstances, and aims to provide an index which allows safety levels against health damages to be judged comprehensively.

Solution to Problem

[0009]

An information processing device according to one aspect of the present invention comprises: an impact level determination unit adapted to determine an impact level of a risk of health damage; a frequency determination unit adapted to determine occurrence frequency of the risk; and a safety level calculation unit adapted to calculate magnitude of the risk using the determined impact level of the risk and occurrence frequency of the risk and calculate a safety level against health damage based on the calculated magnitude of the risk.

[0010]

An information processing method according to one aspect of the present invention comprises the steps of: determining an impact level of a risk of health damage; determining occurrence frequency of the risk; and calculating magnitude of the risk using the determined

impact level of the risk and occurrence frequency of the risk and calculating a safety level against health damage based on the calculated magnitude of the risk.

[0011]

A program according to one aspect of the present invention causes a computer to: determine an impact level of a risk of health damage; determine occurrence frequency of the risk; and calculate magnitude of the risk using the determined impact level of the risk and occurrence frequency of the risk and calculate a safety level against health damage based on the calculated magnitude of the risk.

[0012]

According to one aspect of the present invention, an impact level of a risk of health damage is determined; occurrence frequency of the risk is determined; and magnitude of the risk is calculated using the determined impact level of the risk and occurrence frequency of the risk and a safety level against health damage is calculated based on the calculated magnitude of the risk.

Advantageous Effect of Invention

[0013]

One aspect of the present invention provides an index which allows safety levels against health damages to be judged comprehensively.

Brief Description of Drawings

[0014]

Fig. 1 is a block diagram showing a configuration example of a safety level scaling system resulting from application of the present invention.

Fig. 2 is a block diagram showing a hardware configuration example of a server.

Fig. 3 is a diagram showing an example of a Main screen.

Fig. 4 is a block diagram showing a functional configuration example of the safety level scaling system.

Fig. 5 is a diagram showing an example of a Sample Information Registration screen.

Fig. 6 is a diagram showing an example of a Food Poisoning Bacteria Test Result Registration screen.

Fig. 7 is a diagram showing an example of an Agricultural Chemicals/Antibiotics Test Result Registration screen.

Figs. 8A to 8E are diagrams showing an example of agricultural chemicals and antibiotics.

Figs. 9A to 9E are diagrams showing an example of agricultural chemicals and antibiotics.

Figs. 10A to 10E are diagrams showing an example of agricultural chemicals and antibiotics.

Fig. 11 is a diagram showing an example of a Radiation Measurement Result Registration screen.

Fig. 12 is a diagram showing an example of a Foreign Contamination Test Result Registration screen.

Fig. 13 is a diagram showing an example of an Allergen Contamination Test Result Registration screen.

Fig. 14 is a diagram showing an example of a Virus Test Result Registration screen.

Fig. 15 is a diagram showing an example of a Health Care Survey Result Registration screen.

Fig. 16 is a diagram showing an example of an Infection Prevention Measure Survey Result Registration screen.

Fig. 17 is a diagram showing an example of a Personal Appearance/Clothing/Hairstyle/Ornamentation Survey Result Registration screen.

Fig. 18 is a diagram showing an example of a Hygiene Education Survey Result Registration screen.

Fig. 19 is a diagram showing an example of a Result List screen.

Fig. 20 is a diagram showing an example of a Result Output screen.

Fig. 21 is a diagram showing an example of a certificate of inspection.

Fig. 22 is a diagram showing an example of setting a risk impact level.

Fig. 23 is a flowchart describing a safety level calculation process.

Description of Embodiment

[0015]

<Configuration example of safety level scaling system>

Fig. 1 is a block diagram showing a configuration example of a safety level scaling system resulting from application of the present invention.

[0016]

The safety level scaling system 1 of Fig. 1 is designed to test and evaluate safety levels (security levels) against human health damage caused, for example, by food poisoning, radiation, hygiene management, microbes, and the like.

[0017]

The safety level scaling system 1 is used in business establishments, for example, kitchens and dining rooms of elementary and junior high schools, factories, offices, nursing and personal care facilities, eating and drinking places, and food factories. The safety level scaling system 1 is designed to test, evaluate, and output safety levels of foods produced in the business establishments.

[0018]

The safety level scaling system 1 can unitarily manage the sanitary conditions of a large number of business establishments, and is useful, in particular, when many (plural) business establishments are deployed throughout the country or a certain region. In an embodiment of the present invention, description will be

given of an example of checking the safety levels of products (foods) produced and provided in each chain restaurant of a company which deploys an eating/drinking establishment chain.

[0019]

Thus, in other words, the safety level scaling system 1 of Fig. 1 unitarily manages the safety levels of products provided in plural chain restaurants of a company which deploys an eating/drinking establishment chain.

[0020]

The safety level scaling system 1 is made up of a server 11 and one or more terminal devices 12. Although three terminal devices 12-1 to 12-3 are illustrated in Fig. 1, the number of terminal devices 12 can be increased and decreased as needed. The server 11 and terminal devices 12 are interconnected via a network such as the Internet, a LAN (Local Area Network), or a VPN (Virtual Private Network).

[0021]

The server 11 acting as an information processing device adapted to process information used to conduct safety testing executes an application program (hereinafter referred to as a safety testing program) configured to conduct the safety testing.

[0022]

The terminal device 12 is, for example, a personal computer (including a laptop), a tablet terminal, a high-performance mobile phone (so-called Smartphone), a dedicated input terminal, or the like. The terminal device 12 is installed in each restaurant, or carried by an examiner who makes a round of the restaurant and examines the sanitary conditions of the restaurant.

[0023]

The terminal device 12 is operated by a restaurant representative such as the restaurant manager of each restaurant, a hygiene manager of the company running the restaurant, an inspector, or the like (hereinafter collectively referred to as the "user"), and the terminal device 12 accesses the server 11 on which a safety testing program is running.

[0024]

The safety testing program executed by the server 11 is a WEB application that is created, for example, in a markup language such as HTML, and a predetermined screen created by the safety testing program is presented on a display of the terminal device 12 by a browser executed on the terminal device 12. The browser has basic functions including a display function for interpreting, for example, an HTML (Hypertext Markup Language) document and presenting a screen on the display or the like, a communications function for setting a URL (Uniform Resource Locator) and thereby accessing a WEB site of the

server 11 and downloading data or transmitting data from/to the site, and a jump functions of jumping to a URL linked in the HTML document.

[0025]

The terminal device 12 accepts operation (input) performed by the user on a predetermined screen presented on the display by the safety testing program and transmits contents of the operation to the server 11 via a network.

[0026]

The server 11 on which the safety testing program is running receives contents of the operation performed on the terminal device 12, and performs predetermined data processing or brings up a next screen on the terminal device 12 according to the contents of operation.

[0027]

<Hardware configuration example of server 11>

Fig. 2 shows a hardware configuration example of the server 11.

[0028]

In the server 11 of Fig. 2, a CPU (Central Processing Unit) 31 performs various processing according to programs stored in a ROM (Read Only Memory) 32 or storage unit 38. The programs as referred to herein include, for example, an OS (Operating System) such as Windows (registered trademark), network adapter drivers, and the like as well as the safety testing program

described above. Programs executed by the CPU 31 and data are stored in the RAM (Random Access Memory) 33 as appropriate. The CPU 31, ROM 32, and RAM 33 are interconnected via a bus 34.

[0029]

Note that the programs executed by the CPU 31 (computer) of the server 11 may be those designed to perform processes time-sequentially in an order described herein or those designed to perform processes concurrently or perform processes individually with required timing such as upon invocation.

[0030]

The CPU 31 is also connected with an input-output interface 35 via the bus 34. The input-output interface 35 is connected with an input unit 36 made up of a keyboard, a mouse, a microphone, and the like as well as with an output unit 37 made up of a display, a speaker, and the like. The CPU 31 performs various processes in response to commands entered through the input unit 36. Then the CPU 31 outputs process results to the output unit 37.

[0031]

The input-output interface 35 is also connected with the storage unit 38 made up of, for example, a hard disk. The storage unit 38 stores programs executed by the CPU 31 and various data. Note that the programs may be

acquired by a communications unit 39 from an external device.

[0032]

Also, the input-output interface 35 is connected with the communications unit 39 and a drive 40, where the communications unit 39 is adapted to communicate with external devices via a network. When a removable medium 41 such as a magnetic disk, optical disk, magneto-optical disk, or semiconductor memory is loaded, the drive 40 drives the removable medium 41 and acquires programs and data recorded in the removable medium 41. The acquired programs and data are transferred to the storage unit 38 and stored there as needed.

[0033]

Note that the hardware configuration of the terminal device 12 in Fig. 1 is basically similar to that of the server 11, and thus description thereof will be omitted.

[0034]

<Example of Main screen>

Fig. 3 shows an example of a Main screen presented first on the display (browser) of the terminal device 12 when the user accesses the server 11 on which the safety testing program is running, via the terminal device 12.

[0035]

The Main screen shown in Fig. 3 is divided into four groups: a basic information registration group, test

result registration group, survey result registration group, and result viewing group.

[0036]

The basic information registration group is used to register basic information such as the name of a company, name of a product (specimen name), and the like subjected to safety testing. The basic information registration group contains a Sample Information Registration button 61 and Customer Master button 62.

[0037]

The Sample Information Registration button 61 is pressed (operated) by the user to register a product to be tested (hereinafter also referred to as a specimen). When the Sample Information Registration button 61 is pressed, a Sample Information Registration screen of Fig. 5 described later is brought up.

[0038]

The Customer Master button 62 is pressed by the user to register customer information including a company to be tested and a business establishment, restaurant, or other facility of the company. When the Customer Master button 62 is pressed, a Customer Registration screen is displayed for the user to enter a customer name, facility names, a code number which uniquely identifies these names, and the like, and information registered on the Customer Registration screen is stored as a customer database.

[0039]

The test result registration group is used to register (enter) test results on toxicity of specimens and on medicines. The test result registration group contains a Food Poisoning Bacteria Result Registration button 71, Agricultural Chemicals/Antibiotics Result Registration button 72, Radiation Measurement Result Registration button 73, Foreign Contamination Test Result Registration button 74, Allergen Contamination Test Result Registration button 75, and Virus Test Result Registration button 76.

[0040]

The Food Poisoning Bacteria Result Registration button 71 is pressed by the user to register test results on food poisoning bacteria testing of the specimen. When the Food Poisoning Bacteria Result Registration button 71 is pressed, a Food Poisoning Bacteria Test Result Registration screen of Fig. 6 described later is brought up.

[0041]

The Agricultural Chemicals/Antibiotics Result Registration button 72 is pressed by the user to register test results on the content of agricultural chemicals and antibiotics in the specimen. When the Agricultural Chemicals/Antibiotics Result Registration button 72 is pressed, an Agricultural Chemicals/Antibiotics Test

Result Registration screen of Fig. 7 described later is brought up.

[0042]

The Radiation Measurement Result Registration button 73 is pressed by the user to register test results on the radiation dose of the specimen. When the Radiation Measurement Result Registration button 73 is pressed, a Radiation Measurement Result Registration screen of Fig. 11 described later is brought up.

[0043]

The Foreign Contamination Test Result Registration button 74 is pressed by the user to register test results on foreign contamination testing of the specimen. When the Foreign Contamination Test Result Registration button 74 is pressed, a Foreign Contamination Test Result Registration screen of Fig. 12 described later is brought up.

[0044]

The Allergen Contamination Test Result Registration button 75 is pressed by the user to register test results on allergen contamination testing of the specimen. When the Allergen Contamination Test Result Registration button 75 is pressed, an Allergen Contamination Test Result Registration screen of Fig. 13 described later is brought up.

[0045]

The Virus Test Result Registration button 76 is pressed by the user to register test results on norovirus testing of specimens and workers. When the Virus Test Result Registration button 76 is pressed, a Virus Test Result Registration screen of Fig. 14 described later is brought up.

[0046]

The survey result registration group is used to register survey results on the hygiene of workers and the facility that handle the specimen. The survey result registration group contains a Health Care Survey Result Registration button 81, Infection Prevention Measure Survey Result Registration button 82, Personal Appearance/Clothing/Hairstyle/Ornamentation Survey Result Registration button 83, and Hygiene Education Survey Result Registration button 84.

[0047]

The Health Care Survey Result Registration button 81 is pressed by the user to register results of a survey conducted on workers regarding health care at a personal level. When the Health Care Survey Result Registration button 81 is pressed, a Health Care Survey Result Registration screen of Fig. 15 described later is brought up.

[0048]

The Infection Prevention Measure Survey Result Registration button 82 is pressed by the user to register

results of survey into infection prevention measures of the facility. When the Infection Prevention Measure Survey Result Registration button 82 is pressed, an Infection Prevention Measure Survey Result Registration screen of Fig. 16 described later is brought up.

[0049]

The Personal Appearance/Clothing/Hairstyle/Ornamentation Survey Result Registration button 83 is pressed by the user to register results of survey into the personal appearance, clothing, hairstyle, and ornamentation of workers. When the Personal Appearance/Clothing/Hairstyle/Ornamentation Survey Result Registration button 83 is pressed, a Personal Appearance/Clothing/Hairstyle/Ornamentation Survey Result Registration screen of Fig. 17 described later is brought up.

[0050]

The Hygiene Education Survey Result Registration button 84 is pressed by the user to register results of survey into the system and workers' comprehension of hygiene education. When the Hygiene Education Survey Result Registration button 84 is pressed, a Hygiene Education Survey Result Registration screen of Fig. 18 described later is brought up.

[0051]

The result viewing group is used to output the test results on a specimen. The result viewing group contains a Result List button 91 and Result Output button 92.

[0052]

The Result List button 91 is pressed by the user to display a list of test and survey results on each test item of the specimen. When the Result List button 91 is pressed, a Result List screen of Fig. 19 described later is brought up.

[0053]

The Result Output button 92 is pressed by the user to display a determination result on a final safety level based on the test results and survey results on the specimen. When the Result Output button 92 is pressed, a Result Output screen of Fig. 20 described later is brought up.

[0054]

<Functional configuration block diagram of safety level scaling system>

Fig. 4 is a block diagram showing a functional configuration example of the safety level scaling system 1, where the functional configuration is implemented when the safety testing program is executed on the server 11.

[0055]

The safety level scaling system 1 includes a basic information registration unit 101, a test result registration unit 102, a survey result registration unit

103, a risk impact level determination unit 104, a risk occurrence frequency determination unit 105, a safety level calculation unit 106, a result output unit 107, and a registration DB 108.

[0056]

The basic information registration unit 101 performs processing when any of the Sample Information Registration button 61 and Customer Master button 62 belonging to the basic information registration group is pressed on the Main screen of Fig. 3.

[0057]

The test result registration unit 102 performs processing when any of the Food Poisoning Bacteria Result Registration button 71, Agricultural Chemicals/Antibiotics Result Registration button 72, Radiation Measurement Result Registration button 73, Foreign Contamination Test Result Registration button 74, Allergen Contamination Test Result Registration button 75, and Virus Test Result Registration button 76 belonging to the test result registration group is pressed on the Main screen of Fig. 3.

[0058]

The survey result registration unit 103 performs processing when any of the Health Care Survey Result Registration button 81, Infection Prevention Measure Survey Result Registration button 82, Personal Appearance/Clothing/Hairstyle/Ornamentation Survey Result

Registration button 83, and Hygiene Education Survey Result Registration button 84 belonging to the survey result registration group is pressed.

[0059]

The risk impact level determination unit 104 determines the impact level of risk of health damage caused by the specimen, based on the test results and survey results registered in the test result registration group and survey result registration group. Details of a method for determining the impact level of risk will be described later.

[0060]

The risk occurrence frequency determination unit 105 determines the occurrence frequency of risk of health damage caused by the specimen, based on the test results and survey results registered in the test result registration group and survey result registration group. Details of a method for determining the risk occurrence frequency will be described later.

[0061]

The safety level calculation unit 106 calculates the magnitude of risk using the impact level of risk determined by the risk impact level determination unit 104 and the occurrence frequency of risk determined by the risk occurrence frequency determination unit 105 and calculates the safety level against health damage from the calculated magnitude of risk. Although details will

be described later, the safety level against health damage is calculated as the inverse of the calculated magnitude of risk.

[0062]

The result output unit 107 performs processing when any of the Result List button 91 and Result Output button 92 belonging to the result viewing group is pressed on the Main screen of Fig. 3.

[0063]

The registration DB 108 stores the information registered in the basic information registration unit 101, test result registration unit 102, survey result registration unit 103, and the like as well as the results and the like calculated by the safety level calculation unit 106 and the like. The customer database is one of the databases stored in the registration DB 108.

[0064]

The basic information registration unit 101, test result registration unit 102, survey result registration unit 103, and result output unit 107 have a display control unit, an information acquisition unit, and a communications control unit individually or in common, where the display control unit presents a predetermined screen on the display of the server 11 and terminal device 12, the information acquisition unit acquires input information entered via a keyboard or a mouse of the server 11 and terminal device 12 and the like, and

the communications control unit controls communications of the server 11 and terminal device 12.

[0065]

Detailed description will be given below of processes (operations) performed when respective buttons on the Main screen are pressed as well as calculation of the safety level performed based on entered test results and survey results.

[0066]

<Sample Information Registration screen>

Fig. 5 shows an example of the Sample Information Registration screen.

[0067]

To newly register a product (specimen) to be tested, the user presses the Sample Information Registration button 61 in the Main screen of Fig. 3. Consequently, the Sample Information Registration screen of Fig. 5 is brought up.

[0068]

The Sample Information Registration screen displays fields of Customer Name 121, Facility Name 122, Facility CD 123, Sub CD 124, Specimen Name 125, Specimen ID 126, Test 127, and Survey 128 as well as a Register button 129, Modify button 130, and Cancel button 131.

[0069]

The user enters the company name of a customer, the facility name of a restaurant or business establishment,

and the product name of a product to be tested in the fields of Customer Name 121, Facility Name 122, and Specimen Name 125 on the Sample Information Registration screen, respectively. In the field of Specimen Name 125, for example, the name of the food to be tested such as "cake" is entered as shown in Fig. 5.

[0070]

The company name and facility name of the customer may be entered directly or a company name and facility name may be designed to be entered by selecting from a pull-down menu based on a customer database entered on a Customer Registration screen brought up when the Customer Master button 62 is pressed.

[0071]

Once a company name and facility name of the customer is entered in the field of Customer Name 121 and Facility Name 122, a code number (CD) which uniquely identifies the entered company name and facility name is acquired from the customer database and displayed in the fields of Facility CD 123 and Sub CD 124 in response.

[0072]

Also, in an initial state of the Sample Information Registration screen, the field of Specimen ID 126 remains blank. When the fields of Customer Name 121, Facility Name 122, and Specimen Name 125 are filled out and the Register button 129 is pressed, a specimen ID is given by

the basic information registration unit 101 and stored in the registration DB 108.

[0073]

When the user wants to modify registered information about a specimen already registered in the registration DB 108, the user presses the Modify button 130. When the Modify button 130 is pressed, a screen (not shown) is brought up, allowing the user to select a specimen registered in the registration DB 108. Then, when a predetermined specimen is selected, the registered information about the selected specimen is read out and displayed on the Sample Information Registration screen. In this case, a specimen ID already assigned is displayed in the field of Specimen ID 126.

[0074]

Buttons corresponding to various tests belonging to the test result registration group are displayed in the field of Test 127: namely a Food Poisoning Bacteria (Toxin) button 132, Radiation Measurement button 133, Virus Test button 134, Foreign Contamination button 135, Agricultural Chemicals/Antibiotics button 136, and Allergen Contamination button 137.

[0075]

When any of the buttons 132 to 137 corresponding to the tests belonging to the test result registration group is pressed, a setting screen is brought up, allowing the user to set details of the given test. Also, the buttons

132 to 137 in the field of Test 127 are displayed by being distinguished in color or the like between tests which have already been finished and whose results have already been registered and tests yet to be conducted. This allows the user to see at a glance which tests in the field of Test 127 have already been conducted on the specimen identified by Specimen ID 126.

[0076]

Buttons corresponding to various surveys belonging to the survey result registration group are displayed in the field of Survey 128: namely a Health Care (Personal Management) button 141, Infection Prevention Measure (On-site) button 142, Personal Appearance/Clothing/Hairstyle/Ornamentation button 143, and Hygiene Education (Knowledge) button 144.

[0077]

When any of the buttons 141 to 144 corresponding to the surveys belonging to the survey result registration group is pressed, a setting screen is brought up, allowing the user to set details of the given survey. Also, the buttons 141 to 144 in the field of Survey 128 are displayed by being distinguished in color or the like between surveys which have already been finished and whose results have already been registered and surveys yet to be conducted. This allows the user to see at a glance which surveys in the field of Survey 128 have

already been conducted on the specimen identified by Specimen ID 126.

[0078]

The Register button 129 is pressed to register (modify) entered information in the registration DB 108 and return to the Main screen of Fig. 3. The Cancel button 131 is pressed to cancel registration of information on the Sample Information Registration screen and return to the Main screen of Fig. 3.

[0079]

<Food Poisoning Bacteria Test Result Registration screen>

Fig. 6 shows an example of the Food Poisoning Bacteria Test Result Registration screen.

[0080]

To register test results on food poisoning bacteria testing of the specimen, the user presses the Food Poisoning Bacteria Result Registration button 71 on the Main screen of Fig. 3. Consequently, the Food Poisoning Bacteria Test Result Registration screen of Fig. 6 is brought up.

[0081]

The Food Poisoning Bacteria Test Result Registration screen displays fields of Specimen ID 151 and Number of Tests 152 and a test result input area 153 as well as a Register button 154 and a Cancel button 155.

[0082]

The field of Specimen ID 151 displays the specimen ID of the specimen whose test results of food poisoning bacteria testing are going to be registered. The specimen ID is specified by the user.

[0083]

The field of Number of Tests 152 displays the number of tests conducted during an inspection period. In the description of the present embodiment, it is assumed that the inspection period is one week. In the example of Fig. 6, "4" is displayed as the number of tests, and four food poisoning bacteria tests are conducted here by changing production dates (lots) during one week specified as the inspection period. Note that the number of tests can be specified on a setting screen brought up when the Food Poisoning Bacteria (Toxin) button 132 is pressed on the Sample Information Registration screen of Fig. 5.

[0084]

As many result input fields are displayed in the test result input area 153 as the number of tests displayed in the field of Number of Tests 152. There are ten test items: General bacteria, Coliform group, Mold, Yeast, Staphylococcus aureus, Cereus, Colon bacillus, Salmonella, Vibrio parahaemolyticus, and Heat-resistant bacteria. Test items of food poisoning bacteria testing can be specified on a setting screen brought up when the Food Poisoning Bacteria (Toxin) button 132 is pressed on the Sample Information Registration screen of Fig. 5.

The general bacteria and coliform group present no problem if the number of detected bacteria is 1×10^7 or less. Detection results of the other bacteria are indicated by either negative (-) or positive (+), and if the detection result is negative (-), it is determined that there is no problem.

[0085]

The Register button 154 is pressed to register (save) entered test results of food poisoning bacteria testing. The Cancel button 155 is pressed to cancel the entered test results of food poisoning bacteria testing and return to the Main screen of Fig. 3.

[0086]

<Agricultural Chemicals/Antibiotics Test Result Registration screen>

Fig. 7 shows an example of the Agricultural Chemicals/Antibiotics Test Result Registration screen.

[0087]

To register test results on the content of agricultural chemicals and antibiotics in the specimen, the user presses the Agricultural Chemicals/Antibiotics Result Registration button 72 on the Main screen of Fig. 3. Consequently, the Agricultural Chemicals/Antibiotics Test Result Registration screen of Fig. 7 is brought up.

[0088]

The Agricultural Chemicals/Antibiotics Test Result Registration screen displays Specimen ID 161, a test

result input area 162, a Register button 163, and a Cancel button 164.

[0089]

The field of Specimen ID 161 displays the specimen ID of the specimen whose agricultural chemicals and antibiotics test results are going to be registered. The specimen ID is specified by the user.

[0090]

The test result input area 162 displays a result input fields for items of agricultural chemicals and antibiotics set to be tested. In the example of Fig. 7, 22 agricultural chemicals and antibiotics are set as items to be tested, including 1,1-dichloro-2,2-bis(4-ethylphenyl)ethane, 1,2-dibromoethane, 1-naphthaleneacetic acid, 2-(10.01 naphtyl)acetamide, 2,2-DPA(dalapon), and the like to allow test results to be entered. When a value equal to or larger than a standard value is detected, the detected value is entered, but when the substance is not detected (undetectable level), "ND (NOT DETECTED)" is entered.

[0091]

The agricultural chemicals and antibiotics to be tested can be specified on a setting screen brought up when the Agricultural Chemicals/Antibiotics button 136 is pressed on the Sample Information Registration screen of Fig. 5. Approximately 460 items shown in Figs. 8A to 8E,9A to 9E,and 10A to 10E are available as agricultural

chemicals and antibiotics which can be specified as items to be tested.

[0092]

<Radiation Measurement Result Registration screen>

Fig. 11 shows an example of the Radiation Measurement Result Registration screen.

[0093]

To register test results on the radiation dose of the specimen, the user presses the Radiation Measurement Result Registration button 73 on the Main screen of Fig. 3. Consequently, the Radiation Measurement Result Registration screen of Fig. 11 is brought up.

[0094]

The Radiation Measurement Result Registration screen displays fields of Specimen ID 171 and Number of Tests 172 and a measurement result input area 173 as well as a Register button 174 and a Cancel button 175.

[0095]

The field of Specimen ID 171 displays the specimen ID of the specimen whose radiation measurement results are going to be registered. The specimen ID is specified by the user.

[0096]

The field of Number of Tests 172 displays the number of tests conducted during one week specified as an inspection period. In this example, "3" is displayed as the number of tests, and three radiation measurements are

taken here by changing dates during one week specified as the inspection period. The number of tests can be specified on a setting screen brought up when the Radiation Measurement button 133 is pressed on the Sample Information Registration screen of Fig. 5.

[0097]

As many result input fields are displayed in the measurement result input area 173 as the number of tests displayed in the field of Number of Tests 172. Measurement items are cesium 137 and cesium 134. A measured value less than 10 becquerels/kg is determined to be normal (there is no problem) and a measured value equal to 10 becquerels/kg or more is entered by being determined to be abnormal (NG). Note that the sum of the measured values of cesium 137 and cesium 134 may be used to determine whether or not the measurement result is normal.

[0098]

The Register button 174 is pressed to register (save) entered measurement results of radiation measurements. The Cancel button 175 is pressed to cancel the entered measurement results of radiation measurements and return to the Main screen of Fig. 3.

[0099]

<Foreign Contamination Test Result Registration screen>

Fig. 12 shows an example of the Foreign Contamination Test Result Registration screen.

[0100]

To register test results on foreign contamination testing of the specimen, the user presses the Foreign Contamination Test Result Registration button 74 on the Main screen of Fig. 3. Consequently, the Foreign Contamination Test Result Registration screen of Fig. 12 is brought up.

[0101]

The Foreign Contamination Test Result Registration screen displays fields of Specimen ID 181 and Number of Tests 182, a test result input area 183, an Occurrence Frequency input area 184, a Comment input area 185, and an overall result display area 186 as well as a Register button 187 and a Cancel button 188.

[0102]

The field of Specimen ID 181 displays the specimen ID of the specimen whose test results of foreign contamination testing are going to be registered. The specimen ID is specified by the user.

[0103]

The field of Number of Tests 182 displays the number of tests conducted during one week specified as an inspection period. In this example, "1" is displayed as the number of tests, and one foreign contamination test is conducted here during one week specified as the

inspection period. The number of tests can be specified on a setting screen brought up when the Foreign Contamination button 135 is pressed on the Sample Information Registration screen of Fig. 5.

[0104]

The test result input area 183 displays test items of foreign contamination testing: specifically, "X-ray detector," "Personal equipment," "Outside air pollution," "Insect invasion," "Rodent proofing measures," "Facility deterioration," "Cleaning frequency," "Presence/absence of improvement team," and "State of product preservation." These test items can also be specified on a setting screen brought up when the Foreign Contamination button 135 is pressed on the Sample Information Registration screen of Fig. 5.

[0105]

Each test item of the test result input area 183 is provided, for example, in the form of a toggle button, which toggles between indications of [OK] and [NG] each time the button is pressed. Either [OK] or [NG] is entered in each test item of the test result input area 183.

[0106]

The field of "X-ray detector" contains a test item for testing whether the facility is equipped with a metal detector for use to detect foreign matter and whether the metal detector can be used as intended. The field of

"Personal equipment" contains a test item for testing whether there are rules for personal equipment. The field of "Outside air pollution" contains a test item for testing whether there is outside air pollution. The field of "Insect invasion" contains a test item for testing whether preventive measures are taken against insects (insect prevention measures). The field of "Rodent proofing measures" contains a test item for testing whether preventive measures are taken against rodents. The field of "Facility deterioration" contains a test item for testing whether facilities are well-maintained. The field of "Cleaning frequency" contains a test item for testing whether a cleaning record is kept. The field of "Presence/absence of improvement team" contains a test item for testing whether an improvement team such as an improvement action team is stipulated in the company (facility, business establishment) and whether improvement activities are recorded. The field of "State of product preservation" contains a test item for testing whether storage conditions of products or materials are appropriate.

[0107]

The Occurrence Frequency input area 184 contains results obtained by the user by interviewing workers on the frequency of foreign contamination. The Occurrence Frequency input area 184 is designed such that, for example, one of the following items is selected and

entered: Every day, Every week, Every month, Once in a few months, and None for more than a half year.

[0108]

If [NG] is entered in any of the test items of the test result input area 183, the reason for it and matters to be improved are entered as comments in the Comment input area 185. An overall determination result (OK or NG) is displayed in the overall result display area 186 based on all the test items of the test result input area 183. For example, if any of the test items in the test result input area 183 is [NG], the overall determination result is [NG].

[0109]

The Register button 187 is pressed to register (save) entered test results of foreign contamination testing. The Cancel button 188 is pressed to cancel the entered test results of foreign contamination testing and return to the Main screen of Fig. 3.

[0110]

<Allergen Contamination Test Result Registration screen>

Fig. 13 shows an example of the Allergen Contamination Test Result Registration screen.

[0111]

To register test results on allergen contamination testing of the specimen, the user presses the Allergen Contamination Test Result Registration button 75 on the

Main screen of Fig. 3. Consequently, the Allergen Contamination Test Result Registration screen of Fig. 13 is brought up.

[0112]

The Allergen Contamination Test Result Registration screen displays fields of Specimen ID 191 and Number of Tests 192 and a test result input area 193 as well as a Register button 194 and a Cancel button 195.

[0113]

The field of Specimen ID 191 displays the specimen ID of the specimen whose test results of allergen contamination testing are going to be registered. The specimen ID is specified by the user.

[0114]

The field of Number of Tests 192 displays the number of tests conducted during one week specified as an inspection period. In this example, "3" is displayed as the number of tests, and three allergen contamination tests are conducted here by changing dates during one week specified as the inspection period. The number of tests can be specified on a setting screen brought up when the Allergen Contamination button 137 is pressed on the Sample Information Registration screen of Fig. 5.

[0115]

As many result input fields are displayed in the test result input area 193 as the number of tests displayed in the field of Number of Tests 192. The

allergen contamination testing covers six test items for which labeling is mandatory: Buckwheat, Wheat, Peanut, Milk, Egg, and Crustacea (shrimp and crab). Note that the test items can be specified on a setting screen brought up when the Allergen Contamination button 137 is pressed on the Sample Information Registration screen of Fig. 5. When an allergen content of 0.1 ppm or more is detected, a positive (+) is entered as a detection result, and when an allergen content of less than 0.1 ppm is detected, a negative (-) is entered. If all the detection results are negative (-), it is determined that there is no problem.

[0116]

The Register button 194 is pressed to register (save) entered test results of allergen contamination testing. The Cancel button 195 is pressed to cancel the entered test results of allergen contamination testing and return to the Main screen of Fig. 3.

[0117]

<Virus Test Result Registration screen>

Fig. 14 shows an example of the Virus Test Result Registration screen.

[0118]

To register test results on norovirus testing of specimens and workers, the user presses the Virus Test Result Registration button 76 on the Main screen of Fig.

3. Consequently, the Virus Test Result Registration screen of Fig. 14 is brought up.

[0119]

The Virus Test Result Registration screen displays fields of Specimen ID 201 and Number of Tests 202 and a test result input area 203 as well as a Register button 204 and a Cancel button 205.

[0120]

The field of Specimen ID 201 displays the specimen ID of the specimen whose test results of virus testing are going to be registered. The specimen ID is specified by the user.

[0121]

The field of Number of Tests 202 displays the total number of tests conducted during one week specified as an inspection period. In this example, "9" is displayed as the number of tests, and three virus tests are conducted for each of three workers and a specimen by changing production dates (lots) during one week specified as the inspection period and a total of nine test results are entered. The number of workers to be tested, the number of products, and the number of tests per worker (product) can be specified on a setting screen brought up when the Virus Test button 134 is pressed on the Sample Information Registration screen of Fig. 5.

[0122]

As many result input fields are displayed in the test result input area 203 as the number of tests displayed in the field of Number of Tests 202. If norovirus is detected as a test result, a positive (+) is entered, and if norovirus is not detected, a negative (-) is entered. If all the test results are negative (-), it is determined that there is no problem.

[0123]

The Register button 204 is pressed to register (save) entered test results of virus testing. The Cancel button 205 is pressed to cancel the entered test results of virus testing and return to the Main screen of Fig. 3.

[0124]

<Health Care Survey Result Registration screen>

Fig. 15 shows an example of the Health Care Survey Result Registration screen.

[0125]

To register results of a survey conducted on workers regarding health care at a personal level, the user presses the Health Care Survey Result Registration button 81 on the Main screen of Fig. 3. Consequently, the Health Care Survey Result Registration screen of Fig. 15 is brought up.

[0126]

The Health Care Survey Result Registration screen displays fields of Specimen ID 211 and Number of Survey Subjects 212 as well as a survey subject switch button

213, a survey subject input area 214, a survey result input area 215, a Register button 216, and a Cancel button 217.

[0127]

The field of Specimen ID 211 displays the specimen ID of the specimen whose survey results of the health care survey are going to be registered. The specimen ID is specified by the user.

[0128]

The field of Number of Survey Subjects 212 displays the number of people subjected to the health care survey during one week specified as an inspection period. In this example, "5" is displayed as the number of survey subjects, and the health care survey is conducted on five workers during one week specified as the inspection period. The number of survey subjects can be specified on a setting screen brought up when the Health Care (Personal Management) button 141 is pressed on the Sample Information Registration screen of Fig. 5.

[0129]

The survey subject switch button 213 is pressed to switch display between the survey subject input area 214 and survey result input area 215, which are assigned to each survey subject. In the example of Fig. 15, the survey subject input area 214 and survey result input area 215 for the "Second" survey subject are displayed.

[0130]

Attribute information of the survey subject is entered in the survey subject input area 214. The attribute information includes, for example, Company name, Affiliation, Full name, and Sex.

[0131]

The survey result input area 215 displays questionnaire items concerning health care that should be exercised individually. The questionnaire items displayed in the example of Fig. 15 include "I have loose bowels," "I have a touch of a cold or I have a cold," "I have injuries," "I have rough hands or skin," ... The questionnaire items concerning the health care to be exercised individually can be specified on a setting screen brought up when the Health Care (Personal Management) button 141 is pressed on the Sample Information Registration screen of Fig. 5. The user is supposed to check appropriate items in the survey result input area 215.

[0132]

Fig. 15 shows an example of the results of one survey on the second of five survey subjects, in which if even one of the questionnaire items is checked, it is determined that the survey results this time indicate inappropriateness.

[0133]

The Register button 216 is pressed to register (save) entered survey results concerning health care.

The Cancel button 217 is pressed to cancel the entered survey results concerning health care and return to the Main screen of Fig. 3.

[0134]

<Infection Prevention Measure Survey Result Registration screen>

Fig. 16 shows an example of the Infection Prevention Measure Survey Result Registration screen.

[0135]

To register results of a survey into the infection prevention measures of the facility, the user presses the Infection Prevention Measure Survey Result Registration button 82 on the Main screen of Fig. 3. Consequently, the Infection Prevention Measure Survey Result Registration screen of Fig. 16 is brought up.

[0136]

The Infection Prevention Measure Survey Result Registration screen displays fields of Specimen ID 221 and Number of Survey Subjects 222 as well as a survey subject switch button 223, a survey subject input area 224, a survey result input area 225, a Register button 226, and a Cancel button 227.

[0137]

The field of Specimen ID 221 displays the specimen ID of the specimen whose survey results of the infection prevention measure survey are going to be registered. The specimen ID is specified by the user.

[0138]

The field of Number of Survey Subjects 222 displays the number of people subjected to the infection prevention measure survey during one week specified as an inspection period. In this example, "5" is displayed as the number of survey subjects, and the infection prevention measure survey is conducted on five workers during one week specified as the inspection period. The number of survey subjects can be specified on a setting screen brought up when the Infection Prevention Measure (On-site) button 142 is pressed on the Sample Information Registration screen of Fig. 5.

[0139]

The survey subject switch button 223 is pressed to switch display between the survey subject input area 224 and survey result input area 225, which are assigned to each survey subject. In the example of Fig. 16, the survey subject input area 224 and survey result input area 225 for the "Second" survey subject are displayed.

[0140]

Attribute information of the survey subject is entered in the survey subject input area 224. The attribute information includes, for example, Company name, Affiliation, Full name, and Sex.

[0141]

The survey result input area 225 displays questionnaire items concerning the infection prevention

measures of the facility. The questionnaire items displayed in the example of Fig. 16 include "Hand-washing facilities are inadequate," "Contaminated areas and non-contaminated areas are not separated," "Workflow lines are crossed," "There is no receiving record of materials," ... The questionnaire items concerning infection prevention measures can be specified on a setting screen brought up when the Infection Prevention Measure (On-site) button 142 is pressed on the Sample Information Registration screen of Fig. 5. The user is supposed to check appropriate items in the survey result input area 225.

[0142]

Fig. 16 shows an example of the results of one survey on the second of five survey subjects, in which if even one of the questionnaire items is checked, it is determined that the survey results this time indicate inappropriateness.

[0143]

The Register button 226 is pressed to register (save) entered survey results concerning infection prevention measures. The Cancel button 227 is pressed to cancel the entered survey results concerning infection prevention measures and return to the Main screen of Fig. 3.

[0144]

<Personal Appearance/Clothing/Hairstyle/Ornamentation Survey Result Registration screen>

Fig. 17 shows an example of the Personal Appearance/Clothing/Hairstyle/Ornamentation Survey Result Registration screen.

[0145]

To register results of a survey into the personal appearance, clothing, hairstyle, and ornamentation of workers, the user presses the Personal Appearance/Clothing/Hairstyle/Ornamentation Survey Result Registration button 83 on the Main screen of Fig. 3. Consequently, the Personal Appearance/Clothing/Hairstyle/Ornamentation Survey Result Registration screen of Fig. 17 is brought up.

[0146]

The Personal Appearance/Clothing/Hairstyle/Ornamentation Survey Result Registration screen displays fields of Specimen ID 231 and Number of Survey Subjects 232 as well as a survey subject switch button 233, a survey subject input area 234, a survey result input area 235, a Register button 236, and a Cancel button 237.

[0147]

The field of Specimen ID 231 displays the specimen ID of the specimen whose survey results of the personal appearance/clothing/hairstyle/ornamentation survey are

going to be registered. The specimen ID is specified by the user.

[0148]

The field of Number of Survey Subjects 232 displays the number of people subjected to the personal appearance/clothing/hairstyle/ornamentation survey during one week specified as an inspection period. In this example, "5" is displayed as the number of survey subjects, and the personal appearance/clothing/hairstyle/ornamentation survey is conducted on five workers during one week specified as the inspection period. The number of survey subjects can be specified on a setting screen brought up when the Personal Appearance/Clothing/Hairstyle/Ornamentation button 143 is pressed on the Sample Information Registration screen of Fig. 5.

[0149]

The survey subject switch button 233 is pressed to switch display between the survey subject input area 234 and survey result input area 235, which are assigned to each survey subject. In the example of Fig. 17, the survey subject input area 234 and survey result input area 235 for the "Second" survey subject are displayed.

[0150]

Attribute information of the survey subject is entered in the survey subject input area 234. The

attribute information includes, for example, Company name, Affiliation, Full name, and Sex.

[0151]

The survey result input area 235 displays questionnaire items concerning personal appearance, clothing, hairstyle, and ornamentation. The questionnaire items displayed in the example of Fig. 17 include "I do not take a bath every day," "My clothes are dirty," "I do not wear clothes properly," "I do not wear a hat, mask, or gloves," ... The questionnaire items of the personal appearance/clothing/hairstyle/ornamentation survey can be specified on a setting screen brought up when the Personal Appearance/Clothing/Hairstyle/Ornamentation button 143 is pressed on the Sample Information Registration screen of Fig. 5. The user is supposed to check appropriate items in the survey result input area 235.

[0152]

Fig. 17 shows an example of the results of one survey on the second of five survey subjects, in which if even one of the questionnaire items is checked, it is determined that the survey results this time indicate inappropriateness.

[0153]

The Register button 236 is pressed to register (save) entered survey results concerning personal appearance, clothing, hairstyle, and ornamentation. The

Cancel button 237 is pressed to cancel the entered survey results concerning personal appearance, clothing, hairstyle, and ornamentation and return to the Main screen of Fig. 3.

[0154]

<Hygiene Education Survey Result Registration screen>

Fig. 18 shows an example of the Hygiene Education Survey Result Registration screen.

[0155]

To register results of survey into the system and workers' comprehension of hygiene education, the user presses the Hygiene Education Survey Result Registration button 84 on the Main screen of Fig. 3. Consequently, the Hygiene Education Survey Result Registration screen of Fig. 18 is brought up.

[0156]

The Hygiene Education Survey Result Registration screen displays fields of Specimen ID 241 and Number of Survey Subjects 242 as well as a survey subject switch button 243, a survey subject input area 244, a survey result input area 245, a Register button 246, and a Cancel button 247.

[0157]

The field of Specimen ID 241 displays the specimen ID of the specimen whose survey results of hygiene

education are going to be registered. The specimen ID is specified by the user.

[0158]

The field of Number of Survey Subjects 242 displays the number of people subjected to a survey into hygiene education during one week specified as an inspection period. In this example, "5" is displayed as the number of survey subjects, and the survey into hygiene education is conducted on five workers during one week specified as the inspection period. The number of survey subjects can be specified on a setting screen brought up when the Hygiene Education (Knowledge) button 144 is pressed on the Sample Information Registration screen of Fig. 5.

[0159]

The survey subject switch button 243 is pressed to switch display between the survey subject input area 244 and survey result input area 245, which are assigned to each survey subject. In the example of Fig. 18, the survey subject input area 244 and survey result input area 245 for the "Second" survey subject are displayed.

[0160]

Attribute information of the survey subject is entered in the survey subject input area 244. The attribute information includes, for example, Company name, Affiliation, Full name, and Sex.

[0161]

The survey result input area 245 displays questionnaire items concerning hygiene education. The questionnaire items displayed in the example of Fig. 18 include "I do not take a monthly stool test (frequency)," "Not all the workers take a stool test (subject)," "I do not know the dangers of food poisoning bacteria," "I do not know how to wash hands properly," ... The questionnaire items concerning hygiene education can be specified on a setting screen brought up when the Hygiene Education (Knowledge) button 144 is pressed on the Sample Information Registration screen of Fig. 5. The user is supposed to check appropriate items in the survey result input area 245.

[0162]

Fig. 18 shows an example of the results of one survey on the second of five survey subjects, in which if even one of the questionnaire items is checked, it is determined that the survey results this time indicate inappropriateness.

[0163]

The Register button 246 is pressed to register (save) entered survey results concerning hygiene education. The Cancel button 247 is pressed to cancel the entered survey results concerning hygiene education and return to the Main screen of Fig. 3.

[0164]

<Result List screen>

Fig. 19 shows an example of the Result List screen.

[0165]

To display a result list concerning test items for the specimen, the user presses the Result List button 91 on the Main screen of Fig. 3. Consequently, the Result List screen of Fig. 19 is brought up.

[0166]

The Result List screen displays fields of Customer Name 251, Facility Name 252, Facility CD 253, Sub CD 254, Specimen Name 255, Specimen ID 256, an inspection result display area 257, Survey Date 258, and Inspector 259, as well as a Close button 260.

[0167]

The fields of Customer Name 251, Facility Name 252, Facility CD 253, and Sub CD 254 on the Result List screen displays the company name and facility name of the customer and the code number (CD) thereof as with Customer Name 121, Facility Name 122, Facility CD 123, and Sub CD 124 on the Sample Information Registration screen.

[0168]

However, Search buttons 251A and 252A are added to Customer Name 251 and Facility Name 252, respectively. Customer Name 251 displays the company name of a customer selected from a customer list displayed by the user by pressing the Search button 251A. Similarly, Facility Name 252 displays a facility name selected from a

facility name list displayed by the user by pressing the Search button 252A.

[0169]

In Specimen Name 255 and Specimen ID 256, the name and specimen ID of the tested food are displayed as with Specimen Name 125 and Specimen ID 126 on the Sample Information Registration screen.

[0170]

Search buttons 255A and 256A are added to Specimen Name 255 and Specimen ID 256, respectively. Specimen Name 255 displays a product name selected from a specimen list displayed by pressing the Search button 255A. Specimen ID 256 displays a specimen ID selected from a specimen ID list displayed by pressing the Search button 256A.

[0171]

The inspection result display area 257 displays inspection results retrieved so far regarding the specimen identified by the specimen ID displayed in Specimen ID 256. If the number of display items is too many to fit in the space of the inspection result display area 257, hidden test results can be displayed by scrolling.

[0172]

The field of Survey Date 258 displays the date on which tests and surveys were conducted into the specimen identified by the specimen ID displayed in Specimen ID

256. If there are plural test/survey dates, for example, the last (latest) date is displayed.

[0173]

The field of Inspector 259 displays the name of the person in charge of the survey into the specimen identified by the specimen ID displayed in Specimen ID 256.

[0174]

The Close button 260 is pressed to finish displaying the Result List screen and return to the Main screen of Fig. 3.

[0175]

<Result Output screen>

Fig. 20 shows an example of the Result Output screen.

[0176]

To display a final determination result on the safety level based on the test results and survey results on the specimen, the user presses the Result Output button 92 on the Main screen of Fig. 3. Consequently, the Result Output screen of Fig. 20 is brought up.

[0177]

The Result Output screen displays fields of Customer Name 271, Facility Name 272, Facility CD 273, Sub CD 274, Specimen Name 275, Specimen ID 276, and a determination scale display area 277 as well as a Close button 278 and an Issue Certificate button 279.

[0178]

Customer Name 271, Facility Name 272, Facility CD 273, Sub CD 274, Specimen Name 275, and Specimen ID 276 are similar to Customer Name 251, Facility Name 252, Facility CD 253, Sub CD 254, Specimen Name 255, and Specimen ID 256 on the Result List screen of Fig. 19, respectively. Search buttons 271A, 272A, 275A, and 276A are also added to Customer Name 271, Facility Name 272, Specimen Name 275, and Specimen ID 276, respectively.

[0179]

The determination scale display area 277 displays the safety level against health damage as a determination result based on the test results and survey results on the specimen identified by the specimen ID displayed in Specimen ID 256, where the safety level has been calculated by the safety level calculation unit 106.

[0180]

The safety level displayed on the determination scale display area 277 is expressed exponentially. The safety level calculated by the safety level calculation unit 106 is assigned a color according to the height of the safety level.

[0181]

The determination scale display area 277 displays a safety level color sample scale 277A, which is a color sample assigned according to the height of the safety level, as well as displays a result display portion 277B which presents the specimen's safety level "3.7×10^{-9}"

calculated by the safety level calculation unit 106 and a predetermined gray color corresponding to the safety level. A method used by the safety level calculation unit 106 to calculate the safety level will be described later. The user can see the safety level of the specimen at a glance from the value "-9" of the exponent portion of the safety level and the color corresponding to the safety level expressed by a power of 10.

[0182]

In Fig. 20, due to the limitation of a monochrome display, the safety level color sample scale 277A is expressed by a gray scale ranging from black to white according to the height of the safety level, but on a screen capable of color display, a color corresponding to the wavelength of a visible light is displayed by being assigned, for example, according to the height of the safety level, with a cold color of blue being assigned to the neighborhood of 10^{-2} and a warm color of red being assigned to the neighborhood of 10^{-10}.

[0183]

The Close button 278 is pressed to finish displaying the Result Output screen and return to the Main screen of Fig. 3.

[0184]

The Issue Certificate button 279 is pressed to issue an inspection certificate of the specimen's safety level. When the Issue Certificate button 279 is pressed, a

certificate of inspection such as shown in Fig. 21 is printed.

[0185]

In the inspection certificate of Fig. 21, the value "-9" of the exponent portion of the specimen's safety level calculated by the safety level calculation unit 106 is displayed in a large size, being marked with a gray-colored (or chromatic) star symbol corresponding to the safety level. The value "-9" of the exponent portion of the specimen's safety level and gray color displayed here are identical with the value of the safety level and gray color displayed in the result display portion 277B of Fig. 20.

[0186]

<Method for calculating the safety level>

Next, a method used by the safety level calculation unit 106 to calculate the safety level of the specimen will be described.

[0187]

The method for calculating the safety level will be described below with reference to the examples of test results and survey results shown in Figs. 6 to 18.

[0188]

In a safety level calculation process, first, the magnitude of risk (degree of risk) of the specimen is calculated based on the test results and survey results of the specimen entered by the user on the Main screen.

Then, based on the idea that the safety level of the specimen against health damage is the opposite of the calculated magnitude of risk (degree of risk), the safety level is defined to be the inverse of the calculated magnitude of risk.

[0189]

Thus, to begin with, description will be given of a method for calculating the magnitude of risk of the specimen from the test results and survey results shown in Figs. 6 to 18.

[0190]

The magnitude of risk of the specimen is expressed by the product of the magnitude of risk calculated from the test items belonging to the test result registration group and the magnitude of risk calculated from the survey items belonging to the survey result registration group. Then, the magnitude of risk based on the test items belonging to the test result registration group and the magnitude of risk based on the survey items belonging to the survey result registration group are defined as the product of the impact level of the risk and the occurrence frequency of the risk, i.e., "the magnitude of risk in relation to a predetermined test item or survey item = the impact level of risk × occurrence frequency of risk".

[0191]

The impact level of risk is determined, for example, on a scale of n (n > 1) by the risk impact level determination unit 104. For example, if the impact level of risk is determined on a scale of 5, the impact level of risk in relation to each test item or survey item is set in advance as shown in Fig. 22 according to standards: 5 - a level leading to human death; 4 - a level possibly leading to human death; 3 - a significant level of danger; 2 - a level having some impact; and 1 - a level having almost no impact.

[0192]

Regarding the test results of agricultural chemicals and antibiotics, radiation measurements, and allergen contamination, the impact level is set as follows: 5 - there are items whose values are equal to or larger than standard values; 4 - values smaller than standard values have been detected in 20% or more of the items; 3 - values smaller than standard values have been detected in 10% (inclusive) to 20% (exclusive) of the items; 2 - values smaller than standard values have been detected in less than 10% of the items; and 1 - no detection has been made in any of the items (undetectable level).

[0193]

Regarding the test results of food poisoning bacteria (toxin) and virus testing, detection of even a single toxin poses a serious problem, and thus only the

impact level "5" for detection and the impact level "1" for no detection are set.

[0194]

Regarding the test results of foreign contamination, the impact level is set as follows: 5 - foreign contamination occurs every day; 4 - foreign contamination occurs every week; 3 - foreign contamination occurs every month; 2 - foreign contamination occurs once in a few months; and 1 - no foreign contamination has occurred for more than a half year.

[0195]

Regarding the survey results of the survey result registration group, the impact level is set as follows: 5 - there are five inappropriate persons; 4 - there are four inappropriate persons; 3 - there are three inappropriate persons; 2 - there are two inappropriate persons; and 1 - there is one or less inappropriate person.

[0196]

Calculations of the magnitude of risk in relation to individual test items and survey items will be described in order with reference to the test results and survey results shown in Figs. 6 to 18.

[0197]

First, calculation of the magnitude of risk in relation to the items of food poisoning bacteria (toxin) will be described.

[0198]

Regarding the impact level of risk in relation to the items of food poisoning bacteria (toxin), as shown in Fig. 22, since detection of even a single toxin poses a serious problem, an impact level of "5" is set if even a single toxin is detected and an impact level of "1" is set when no toxin is detected.

[0199]

Also, the occurrence frequency of risk in relation to the items of food poisoning bacteria (toxin) is set to the same value as the impact level of risk. The occurrence frequency of risk is set to "5" if even a single toxin is detected and the occurrence frequency of risk is set to "1" when no toxin is detected.

[0200]

According to the test results entered on the Food Poisoning Bacteria Test Result Registration screen of Fig. 6, a coliform group is detected in the second test, a coliform group, mold, and yeast are detected in the third test, a coliform group, mold, and staphylococcus aureus are detected in the fourth test. In this case, the risk impact level determination unit 104 determines that the impact level of risk is "5," and the risk occurrence frequency determination unit 105 determines that the occurrence frequency of risk is "5." Thus, the magnitude of risk in relation to the items of food poisoning

bacteria (toxin) calculated by the safety level calculation unit 106 is 5 × 5 = 25.

[0201]

Next, calculation of the magnitude of risk in relation to the items of agricultural chemicals and antibiotics will be described.

[0202]

As shown in Fig. 22, the impact level of risk in relation to the items of agricultural chemicals and antibiotics is set as follows: 5 - there are items whose values are equal to or larger than standard values; 4 - values smaller than standard values have been detected in 20% or more of the items; 3 - values smaller than standard values have been detected in 10% (inclusive) to 20% (exclusive) of the items; 2 - values smaller than standard values have been detected in less than 10% of the items; and 1 - no detection has been made in any of the items.

[0203]

Also, the occurrence frequency of risk in relation to the items of agricultural chemicals and antibiotics is set to the same value as the impact level of risk.

[0204]

According to the test results entered on the Agricultural Chemicals/Antibiotics Test Result Registration screen of Fig. 7, a value larger than the standard value is detected in the case of 4-

chlorophenoxyacetic acid (4-CPA). In this case, the risk impact level determination unit 104 determines that the impact level of risk is "5" and the risk occurrence frequency determination unit 105 determines that the occurrence frequency of risk is "5." Thus, the magnitude of risk in relation to the items of agricultural chemicals and antibiotics calculated by the safety level calculation unit 106 is 5 × 5 = 25.

[0205]

Next, calculation of the magnitude of risk in relation to the items of radiation measurements will be described.

[0206]

As shown in Fig. 22, the impact level of risk in relation to the items of radiation measurements is set as follows: 5 - there are items whose values are equal to or larger than standard values; 4 - values smaller than standard values have been detected in 20% or more of the items; 3 - values smaller than standard values have been detected in 10% (inclusive) to 20% (exclusive) of the items; 2 - values smaller than standard values have been detected in less than 10% of the items; and 1 - no detection has been made in any of the items.

[0207]

Regarding the occurrence frequency of risk in relation to the items of radiation measurements, a minimum value of "1" is set when no detection is made in

any of the items (less than the standard value), and the number of times radiation is detected is set if radiation is detected one or more times.

[0208]

Regarding the test results entered on the Radiation Measurement Result Registration screen of Fig. 11, since no radiation is detected in any of the three tests, the risk impact level determination unit 104 determines that the impact level of risk is "1" and the risk occurrence frequency determination unit 105 determines that the occurrence frequency of risk is "1." Thus, the magnitude of risk in relation to the items of radiation measurements calculated by the safety level calculation unit 106 is 1 × 1 = 1.

[0209]

Next, calculation of the magnitude of risk in relation to the items of foreign contamination will be described.

[0210]

As shown in Fig. 22, the impact level of risk in relation to the items of foreign contamination is set as follows: 5 - foreign contamination occurs every day; 4 - foreign contamination occurs every week; 3 - foreign contamination occurs every month; 2 - foreign contamination occurs once in a few months; and 1 - no foreign contamination has occurred for more than a half year.

[0211]

The occurrence frequency of risk in relation to the items of foreign contamination is set as the number of test items determined to be [NG] among the test items of "X-ray detector," "Personal equipment," "Outside air pollution," "Insect invasion," "Rodent proofing measures," "Facility deterioration," "Cleaning frequency," "Presence/absence of improvement team," and "State of product preservation."

[0212]

Regarding the test results entered on the Foreign Contamination Test Result Registration screen of Fig. 12, the Occurrence Frequency input area 184 contains information that "foreign contamination occurs every day" while in the test result input area 183, "X-ray detector," "Personal equipment," "Outside air pollution," and "Insect invasion" are determined to be [NG]. Thus, the risk impact level determination unit 104 determines that the impact level of risk is "5" and the risk occurrence frequency determination unit 105 determines that the occurrence frequency of risk is "4." Consequently, the magnitude of risk in relation to the items of foreign contamination calculated by the safety level calculation unit 106 is $5 \times 4 = 20$.

[0213]

Next, calculation of the magnitude of risk in relation to the items of allergen contamination will be described.

[0214]

As shown in Fig. 22, the impact level of risk in relation to the items of allergen contamination is set as follows: 5 - there are items whose values are equal to or larger than standard values; 4 - values smaller than standard values have been detected in 20% or more of the items; 3 - values smaller than standard values have been detected in 10% (inclusive) to 20% (exclusive) of the items; 2 - values smaller than standard values have been detected in less than 10% of the items; and 1 - no detection has been made in any of the items.

[0215]

Regarding the occurrence frequency of risk in relation to the items of allergen contamination, a minimum value of "1" is set when no detection is made in any of the items, and the number of times allergen contamination is detected is set if allergen contamination is detected one or more times.

[0216]

Regarding the test results entered on the Allergen Contamination Test Result Registration screen of Fig. 13, since a predetermined allergen is detected in two of three allergen contamination tests, the risk impact level determination unit 104 determines that the impact level

of risk is "5" and the risk occurrence frequency determination unit 105 determines that the occurrence frequency of risk is "2." Thus, the magnitude of risk in relation to the items of allergen contamination calculated by the safety level calculation unit 106 is 5 × 2 = 10.

[0217]

Next, calculation of the magnitude of risk in relation to the items of virus testing will be described.

[0218]

Regarding the impact level of risk in relation to the items of virus testing, as shown in Fig. 22, since detection of even a single toxin poses a serious problem, an impact level of "5" is set if even a single toxin is detected and an impact level of "1" is set when no toxin is detected.

[0219]

Regarding the occurrence frequency of risk in relation to the items of virus testing, a minimum value of "1" is set when no detection is made in any of the items, and the number of times virus is detected is set if virus is detected one or more times.

[0220]

Regarding the test results entered on the Virus Test Result Registration screen of Fig. 14, since norovirus is detected in three of nine tests, the risk impact level determination unit 104 determines that the impact level

of risk is "5" and the risk occurrence frequency determination unit 105 determines that the occurrence frequency of risk is "3." Thus, the magnitude of risk in relation to the items of virus testing calculated by the safety level calculation unit 106 is 5 × 3 = 15.

[0221]

Next, calculation of the magnitude of risk in relation to the items of health care will be described.

[0222]

The impact level of risk in relation to the items of health care is set as follows: 5 - there are five inappropriate persons; 4 - there are four inappropriate persons; 3 - there are three inappropriate persons; 2 - there are two inappropriate persons; and 1 - there is one or less inappropriate person.

[0223]

The occurrence frequency of risk in relation to the items of health care is set at the total number of surveys in which survey results indicate inappropriateness.

[0224]

The example of the Health Care Survey Result Registration screen in Fig. 15 shows the results of one survey on the second of five survey subjects, and it is assumed that three of the five survey subjects are each determined to be inappropriate once based on respective survey results. In this case, since there are three

inappropriate persons, the risk impact level determination unit 104 determines that the impact level of risk is "3." Then, since each of the three persons is determined to be inappropriate once for a total of three times, the risk occurrence frequency determination unit 105 determines that the occurrence frequency of risk is "3." Thus, the magnitude of risk in relation to the items of health care calculated by the safety level calculation unit 106 is 3 × 3 = 9.

[0225]

Calculation of the magnitude of risk in relation to the items of infection prevention measures will be described.

[0226]

The impact level of risk in relation to the items of infection prevention measures is set as follows: 5 - there are five inappropriate persons; 4 - there are four inappropriate persons; 3 - there are three inappropriate persons; 2 - there are two inappropriate persons; and 1 - there is one or less inappropriate person.

[0227]

The occurrence frequency of risk in relation to the items of infection prevention measures is set at the total number of surveys in which survey results indicate inappropriateness.

[0228]

The example of the Infection Prevention Measure Survey Result Registration screen in Fig. 16 shows the results of one survey on the second of five survey subjects, and it is assumed that two of the five survey subjects are each determined to be inappropriate once based on respective survey results. In this case, since there are two inappropriate persons, the risk impact level determination unit 104 determines that the impact level of risk is "2." Then, since each of the two persons are determined to be inappropriate once for a total of two times, the risk occurrence frequency determination unit 105 determines that the occurrence frequency of risk is "2." Thus, the magnitude of risk in relation to the items of infection prevention measures calculated by the safety level calculation unit 106 is 2 × 2 = 4.

[0229]

Calculation of the magnitude of risk in relation to the items of personal appearance, clothing, hairstyle, and ornamentation will be described.

[0230]

The impact level of risk in relation to the items of personal appearance, clothing, hairstyle, and ornamentation is set as follows: 5 - there are five inappropriate persons; 4 - there are four inappropriate persons; 3 - there are three inappropriate persons; 2 -

there are two inappropriate persons; and 1 - there is one or less inappropriate person.

[0231]

The occurrence frequency of risk in relation to the items of personal appearance, clothing, hairstyle, and ornamentation is set at the total number of surveys in which survey results indicate inappropriateness.

[0232]

The example of the Personal Appearance/Clothing/Hairstyle/Ornamentation Survey Result Registration screen in Fig. 17 shows the results of one survey on the second of five survey subjects, and it is assumed that one of the five survey subjects is determined to be inappropriate once based on the survey result. In this case, since there is one inappropriate person, the risk impact level determination unit 104 determines that the impact level of risk is "1." Then, since one person is determined to be inappropriate once for a total of one time, the risk occurrence frequency determination unit 105 determines that the occurrence frequency of risk is "1." Thus, the magnitude of risk in relation to the items of personal appearance, clothing, hairstyle, and ornamentation calculated by the safety level calculation unit 106 is 1 × 1 = 1.

[0233]

Calculation of the magnitude of risk in relation to the items of hygiene education will be described.

[0234]

The impact level of risk in relation to the items of hygiene education is set as follows: 5 - there are five inappropriate persons; 4 - there are four inappropriate persons; 3 - there are three inappropriate persons; 2 - there are two inappropriate persons; and 1 - there is one or less inappropriate person.

[0235]

The occurrence frequency of risk in relation to the items of hygiene education is set at the total number of surveys in which survey results indicate inappropriateness.

[0236]

The example of the Hygiene Education Survey Result Registration screen in Fig. 18 shows the results of one survey on the second of five survey subjects, and it is assumed that two of the five survey subjects are each determined to be inappropriate once based on respective survey results. In this case, since there are two inappropriate persons, the risk impact level determination unit 104 determines that the impact level of risk is "2." Then, since each of the two persons are determined to be inappropriate once for a total of two times, the risk occurrence frequency determination unit 105 determines that the occurrence frequency of risk is "2." Thus, the magnitude of risk in relation to the

items of hygiene education calculated by the safety level calculation unit 106 is 2 × 2 = 4.

[0237]

To summarize the above, the magnitude of risks calculated for respective test items or survey items are as follows:

The magnitude of risk in relation to the items of food poisoning bacteria (toxin): 5 × 5 = 25

The magnitude of risk in relation to the items of agricultural chemicals and antibiotics: 5 × 5 = 25

The magnitude of risk in relation to the items of radiation measurements: 1 × 1 = 1

The magnitude of risk in relation to the items of foreign contamination: 5 × 4 = 20

The magnitude of risk in relation to the items of allergen contamination: 5 × 2 = 10

The magnitude of risk in relation to the items of virus testing: 5 × 3 = 15

The magnitude of risk in relation to the items of health care: 3 × 3 = 9

The magnitude of risk in relation to the items of infection prevention measures: 2 × 2 = 4

The magnitude of risk in relation to the items of personal appearance, clothing, hairstyle, and ornamentation: 1 × 1 = 1

The magnitude of risk in relation to the items of hygiene education: 2 × 2 = 4

[0238]

The safety level calculation unit 106 multiplies together the magnitudes of risks in relation to test items and survey items calculated as described above and thereby calculates the magnitude of risk of the specimen. That is, the safety level calculation unit 106 calculates the magnitude of risk of the specimen as 2.7×10^8 using the following expression.

$25 \times 25 \times 1 \times 20 \times 10 \times 15 \times 9 \times 4 \times 1 \times 4 = 2.7 \times 10^8$

[0239]

Since the safety level of the specimen is given by the inverse of the calculated magnitude of risk, the safety level calculation unit 106 calculates the safety level of the specimen as follows:

Safety level of specimen $= 1 / (2.7 \times 10^8) = 3.7 \times 10^{-9}$

[0240]

As described above, the risk impact level determination unit 104 determines the impact level of risk caused by the specimen, based on the test results and survey results registered in the test result registration group and survey result registration group while the risk occurrence frequency determination unit 105 determines the occurrence frequency of risk caused by the specimen, based on the test results and survey results registered in the test result registration group

and survey result registration group. Then the safety level calculation unit 106 calculates the magnitude of risk using the calculated impact level of risk and occurrence frequency of risk in relation to each item, and calculates the safety level against health damage based on the calculated magnitude of risk.

[0241]

Note that the above-described method for determining the impact level of risk and method for determining the risk occurrence frequency in relation to each item are strictly exemplary and are not restrictive.

[0242]

<Flowchart of safety level calculation process>

A safety level calculation process performed by the safety level scaling system 1 to calculate the safety level of a predetermined specimen will be described with reference to a flowchart of Fig. 23. It is assumed that the specimen whose safety level is calculated has been determined before the process of Fig. 23 is started.

[0243]

First, in step S1, the test result registration unit 102 acquires the results of each test item belonging to the test result registration group of the specimen for which calculations are carried out. Specifically, the test result registration unit 102 acquires the test results on food poisoning bacteria testing of the specimen entered via the Food Poisoning Bacteria Test

Result Registration screen of Fig. 6, the test results on the content of agricultural chemicals and antibiotics in the specimen entered via the Agricultural Chemicals/Antibiotics Test Result Registration screen of Fig. 7, the test results on the radiation dose of the specimen entered via the Radiation Measurement Result Registration screen of Fig. 11, the test results on allergen contamination testing of the specimen entered via the Foreign Contamination Test Result Registration screen of Fig. 12, and the test results on norovirus testing of the specimen and workers entered via the Virus Test Result Registration screen of Fig. 14.

[0244]

In step S2, the survey result registration unit 103 acquires the results of each survey item belonging to the survey result registration group of the specimen for which calculations are carried out. Specifically, in relation to the specimen for which calculations are carried out the survey result registration unit 103 acquires the survey results on health care entered via the Health Care Survey Result Registration screen of Fig. 15, the survey results on the infection prevention measures of the facility entered via the Infection Prevention Measure Survey Result Registration screen of Fig. 16, the survey results on the personal appearance, clothing, hairstyle, and ornamentation of workers entered via the Personal

Appearance/Clothing/Hairstyle/Ornamentation Survey Result Registration screen of Fig. 17, and survey results on the system and workers' comprehension of hygiene education entered via the Hygiene Education Survey Result Registration screen of Fig. 18.

[0245]

In step S3, the risk impact level determination unit 104 determines the impact level of the risk in relation to each test result or survey result based on the test results and survey results acquired in step S1 and step S2.

[0246]

In step S4, the risk occurrence frequency determination unit 105 determines the occurrence frequency of the risk in relation to each test result or survey result based on the test results and survey results acquired in step S1 and step S2.

[0247]

In step S5, the safety level calculation unit 106 calculates the magnitude of risk in relation to each test item belonging to the test result registration group or each survey item belonging to the survey result registration group. The magnitude of risk in relation to each test item or each survey item can be calculated as the product of the impact level of risk and occurrence frequency of risk.

[0248]

In step S6, the safety level calculation unit 106 calculates the magnitude of risk of the specimen using the calculated magnitudes of risk in relation to all the test items and survey items. The magnitude of risk of the specimen is calculated as the product of the magnitudes of risks in relation to all the test items and survey items.

[0249]

In step S7, the safety level calculation unit 106 calculates the safety level of the specimen using the calculated magnitude of risk of the specimen. The safety level of the specimen is calculated as the inverse of the calculated magnitude of risk.

[0250]

This concludes the safety level calculation process.

[0251]

Note that the calculated safety level of the specimen is stored in the registration DB 108, and read out as required, for example, when the Result List button 91 or Result Output button 92 is pressed on the Main screen of Fig. 3.

[0252]

As described above, the safety level scaling system 1 resulting from application of the present invention determines and evaluates the safety level (security level) against human health damage by defining the safety level based on new criteria.

[0253]

Based on the idea that the safety level against human health damage is the opposite of the magnitude of risk (degree of risk), the safety level scaling system 1 gives the safety level against human health damage as the inverse of the calculated magnitude of risk.

[0254]

If the color of the visible light wavelength corresponding to the calculated safety level is indicated, for example, on a label, package, or the like of the specimen (food), general consumers can see the safety level of the food by simply looking at the color indicated on the label, package, or the like, representing the safety level.

[0255]

Thus, the value of the calculated safety level or the color corresponding to the safety level can be used as an absolute index or relative index which represents the safety level. That is, the safety level scaling system 1 can provide an index which allows the safety level against health damages to be judged comprehensively.

[0256]

In the example described above, the safety level scaling system 1 is used to test and evaluate safety levels of foods handled in kitchens and dining rooms of elementary and junior high schools, factories, offices, nursing and personal care facilities, and the like as

well as in eating and drinking places, food factories, and other business establishments.

[0257]

However, the safety level scaling system 1 is applicable not only to business establishments which handle products (foods) eaten by human beings, but also to distribution processes and production processes of agricultural products or feed, and can be used as a system for testing and evaluating safety levels (security levels) against health damages to animals such as pets and domestic animals besides human beings.

[0258]

Note that the system as referred to herein means a set of plural components (devices, modules (parts), or the like) regardless of whether all the components are housed in the same casing. Thus, plural devices housed in separate casings and connected via a network constitute a system, and so does a device made up of plural modules housed in a casing.

[0259]

Embodiments of the present invention are not limited to the one described above, and various changes and alterations are possible without departing from the gist of the invention.

[0260]

For example, a combination of all or part of the plural embodiments described above may be adopted.

[0261]

For example, the present invention may adopt a cloud computing architecture in which plural devices share a single function via a network to perform processing in collaboration.

[0262]

Also, the steps of the flowchart described above may be carried out either by a single device or by plural devices on a shared basis.

[0263]

Furthermore, when a single step includes plural processes, the plural processes included in the single step may be carried out by a single device or carried out by plural devices on a shared basis.

Reference Signs List

[0264]

1 Safety level scaling system

11 Servers

12 Terminal device

31 CPU

32 ROM

33 RAM

36 Input unit

37 Output unit

38 Storage unit

39 Communications unit

101 Basic information registration unit

102 Test result registration unit

103 Survey result registration unit

104 Risk impact level determination unit

105 Risk occurrence frequency determination unit

106 Safety level calculation unit

107 Result output unit

108 Registration DB

Claims

[Claim 1]

An information processing device comprising:

an impact level determination unit adapted to determine an impact level of a risk of health damage;

a frequency determination unit adapted to determine occurrence frequency of the risk; and

a safety level calculation unit adapted to calculate magnitude of the risk using the determined impact level of the risk and occurrence frequency of the risk and calculate a safety level against health damage based on the calculated magnitude of the risk.

[Claim 2]

The information processing device according to claim 1, wherein the safety level calculation unit calculates the safety level against health damage using an inverse of the calculated magnitude of risk.

[Claim 3]

The information processing device according to claim 1 or 2, further comprising a safety level output unit adapted to output an indication of the safety level using a color corresponding to the safety level calculated by the safety level calculation unit.

[Claim 4]

The information processing device according to claim 3, wherein a height of the safety level is associated

with a color corresponding to a wavelength a visible light, and the safety level output unit outputs the indication of the safety level using the color corresponding to the wavelength of the visible light according to the calculated safety level.

[Claim 5]

The information processing device according to any one of claims 1 to 3, wherein the impact level determination unit determines the impact level of the risk of health damage on a scale of n.

[Claim 6]

An information processing method comprising the steps of:

determining an impact level of a risk of health damage;

determining occurrence frequency of the risk; and

calculating magnitude of the risk using the determined impact level of the risk and occurrence frequency of the risk and calculating a safety level against health damage based on the calculated magnitude of the risk.

[Claim 7]

A program configured to cause a computer to:

determine an impact level of a risk of health damage;

determine occurrence frequency of the risk; and

calculate magnitude of the risk using the determined impact level of the risk and occurrence frequency of the risk and calculate a safety level against health damage based on the calculated magnitude of the risk.