

Commissioned by the Japanese Ministry of Agriculture,
Forestry and Fisheries



**How to Handle Potato Products produced
from Non-Genetically Modified Potato**

Distribution Manual

March 2002

JAPAN FOOD INDUSTRY CENTER



PREFACE

The labeling system for genetically modified (GM) foods was put into effect on April 1, 2001, which is based on the Japanese Agricultural Standards (JAS) Law.

Processed potato products have been added to items subject to mandatory labeling. This will take effect on January 1, 2003.

Fresh (uncooked/unprocessed) potato imports are currently not permitted due to the vegetable quarantine, and imports are thus restricted to processed products only. As processed potato product imports for the most part come from the U.S., the distribution manual for "non-GM potatoes and processed products" through IP handling has been prepared based on a fact-finding survey of seed potato cultivation farms, commercial cultivation farms, cargo collectors/shippers, manufacturers, etc. in the U.S.

This Manual describes how to perform "identity preserved handling (IP handling)", this is also referred to as the social verification technique, prescribed by the JAS Law (Labeling standards for Genetically Modified Foods as stipulated by the Minister of Agriculture, Forestry and Fisheries).

This Manual should be considered as a guideline. In actual application, each individual enterprise will be required to come up with specific techniques which satisfy the purport and anticipated effects of the Manual.

We would be very pleased if those concerned widely refer to and make good use of this Manual.

March 2002

THE JAPAN FOOD INDUSTRY CENTER

Notice: The official text of this Manual is Japanese.

System of Labeling Genetically Modified Foods

April 2001 saw the launch of a new system for labeling genetically modified (GM) crops, and processed foods made therefrom (Table 1) based on the quality labeling standards laid down under the JAS (Japanese Agricultural Standards) Law.

Identity preserved handling is necessary in order to label products as "identity preserved non-GM product".

- In addition to agricultural products (soybeans, corn, potatoes, rapeseed, and cotton seed, processed foods in which recombinant DNA or the protein thereby still exist (see Note) are subject to mandatory labeling according to the standards.
- Labeling of processed foods made from soybeans, corn or potatoes (Table 2) that are "genetically modified" or "not segregated from GM produce" is mandatory.
- Identity preserved non-GM crops and processed foods need not be labeled, but may be voluntarily labeled as "non-GM product segregated" or "not genetically modified", etc.
- Labeling of processed potato products will take effect on 1 January 2003.

Note: Processed foods (edible oil, etc.) made from an agricultural product which are differ significantly from conventional ones in composition, nutritional value, etc. are subject to mandatory labeling regardless of whether DNA and protein residue exists or not.

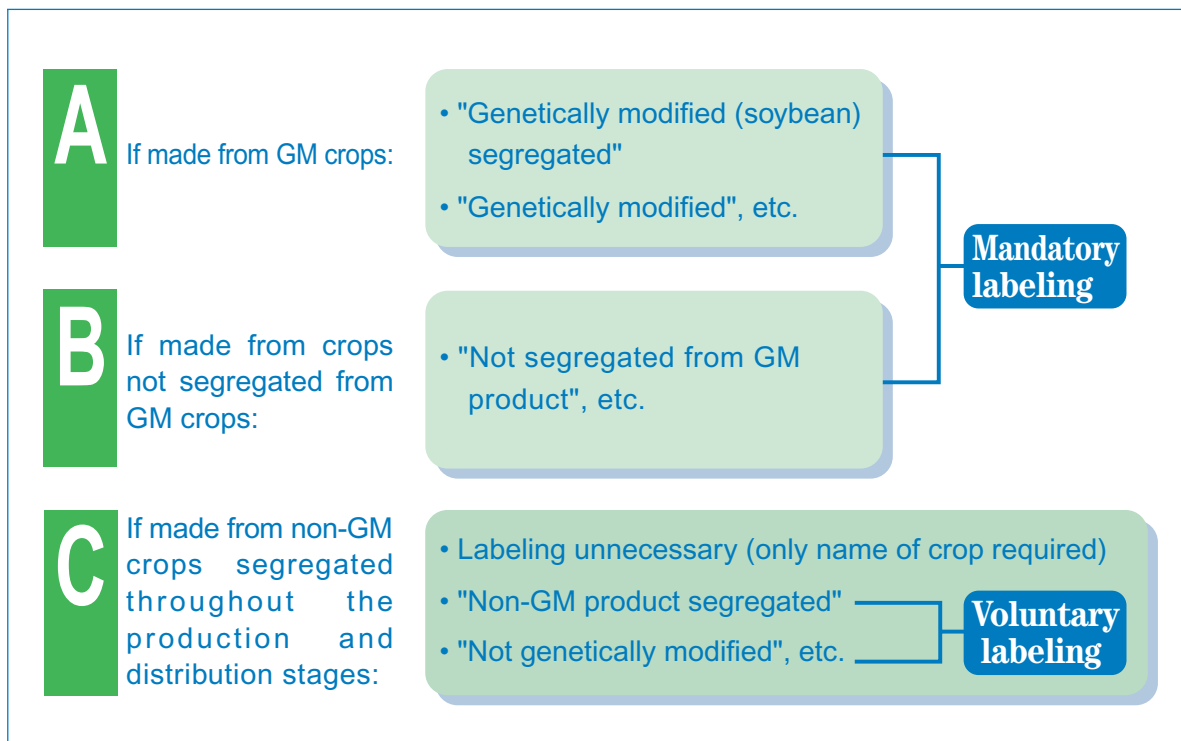
Table 1 Labeling System

(1) Products which differ significantly from those conventional in composition, nutritional value, etc. (ex. oil made from high oleic acid GM soybeans)

• **MANDATORY LABELING** of "Soybeans (high oleic acid, genetically modified), etc.

(2) Products which are equivalent to those conventional in composition, nutritional value, etc.

① Processed foods in which recombinant DNA or the protein thereby still exist even after processing (Table 2)



② Processed foods in which recombinant DNA or the protein produced thereby do not exist as a result of removal or decomposition during processing (soybean oil, soy sauce, corn oil, isomerized liquid sugar, etc.)

• **VOLUNTARY LABELING** -Labeling not required

Table 2 The list of processed foods made from soybeans, corn and potato subject to mandatory labeling.

Food		Crops covered
1.	Tôfu, abura-age (deep-fried bean curd)	Soybeans
2.	Kôri-tôfu (dried bean curd), okara (bean curd lees), yuba (dried soybean casein)	Soybeans
3.	Nattô (fermented soybeans)	Soybeans
4.	Soya milk	Soybeans
5.	Miso	Soybeans
6.	Boiled soybeans	Soybeans
7.	Canned and bottled soybeans	Soybeans
8.	Kinako (roasted soybean flour)	Soybeans
9.	Roasted soybeans	Soybeans
10.	Food made principally from any ingredient covered by categories 1 to 9	Soybeans
11.	Food made principally from soybean (for cooking)	Soybeans
12.	Food made principally from soybean flour	Soybeans
13.	Food made principally from soybean protein	Soybeans
14.	Food made principally from green soybeans	Green Soybeans
15.	Food made principally from soybean sprouts	Soybean sprouts
16.	Corn snacks	Corn
17.	Cornstarch	Corn
18.	Popcorn	Corn
19.	Frozen corn	Corn
20.	Canned and bottled corn	Corn
21.	Food made principally from corn flour	Corn
22.	Food made principally from corn grits (except corn flakes)	Corn
23.	Food made principally from (eating) corn	Corn
24.	Food made principally from any ingredient covered by categories (16) to (20)	Corn
25.	Frozen potato	Patotos
26.	Dehydrated potato	Potatos
27.	Potato starch	Potatos
28.	Potato snacks	Potatos
29.	Food made principally from any ingredient covered by categories (25) to (28)	Potatos
30.	Food made principally from (eating) potato	Potatos

Notes: A food is "made principally from" an ingredient if that ingredient is one of the three main ingredients in terms of weight and in addition comprises at least 5% of the total weight of the ingredients used. The foods covered are those listed above, but as a considerable number of processed foods fall into categories 10, 11, 12, 13, 14, 15, 21, 22, 23, 24, 29 and 30 care is required in determining whether or not a product is covered by labeling requirements.

Distribution Manual

1 Basic concepts

The aim of the Potato IP Handling Manual for segregated handling of "Non-GM potatoes," is proper control to prevent commingling of "GM potatoes" until packaged at final stage of processing for users. Based on the concept of the Distribution Manual for Soybeans and Corn, the Manual has also been prepared for verification for third parties.

As the majority of processed potato products are imported from the U.S., actual distribution conditions there have been surveyed and used as the basis for the preparation of the manual.

Therefore, in cases in which commercial cultivation of GM potatoes is undertaken in the country concerned or in cases in which ingredient potatoes are imported from a GM potato cultivating country and processed potato products manufactured therefrom, identity preserved (IP) handling in accordance with this Manual will be required even for processed potato products imported from countries other than the U.S.

(1) Securing social confidence

IP handling performed at each stage from production of "non-GM potatoes," through distributor to food manufacturer can be clearly indicated by certificates and other means.

(2) Traceable system

Records of IP handling being performed on potatoes or products from which such potatoes are used as an ingredient purchased by user at final processing stage are traceable if and when required.

(3) Consideration regarding current commercial transactions

Various efficient commercial systems and distribution channels from production, distribution to marketing have been structured for potatoes. Such existing systems should not be neglected.

However, unintentional commingling during distribution would be unavoidable even if crops were identity preserved.

Therefore in the same circumstances as of soybeans and corn, the distribution of potatoes in accordance with this manual will be regarded as the properly performed identity preserved handling.

2 IP handling guidelines

As subterranean stems or roots of potatoes undergo vegetative propagation and as seedlings are liable to remain in farmland after harvests, the possibility exists that potatoes planted in the past could grow together with and be harvested along with those planted in the current year.

If crop rotation is practiced and in the case of 2-3 crops (planting other crops for a few years), it is safe to consider that there is no chance of commingling as most remnants, if any, would be eliminated from the soil.

Imports are either in final or intermediate product form and the latter can be roughly classified as frozen or dehydrated products.

As forms of purchase, manufacturing processes and use of such products all differ, structuring a system by which segregation can be maintained at sectors of possible commingling is required subsequent to confirming their respective manufacturing processes. Under such a system, differences between forms of product and manufacturing processes will pose no problem. The only remaining problem would be the possibility of a sector commingling ingredients and/or partly finished products. However, it is safe to say that the possibility of commingling after packaging and until opened is nil.

The guidelines attached hereto have been prepared based on the above-mentioned concepts. Guidelines are classified according to the particulars of ownership and processing at each stage of manufacture and distribution of potatoes and potato products, and the main means of confirmation such as required control methods, main control constituent required records, etc. clarify points where commingling of "GM potatoes" may be possible.

3

Issuing and safekeeping certificates

To ensure credibility of social verification, procedures have been established for issuance of certificates showing the course of control to prevent commingling of "GM potatoes" produced at farms and through various stages to distributors or to final stages at which they are packaged for users. The aim is to strive for arrangements requiring the keeping and maintaining of records guaranteeing the validity of the contents of certificates.

To verify claims that "products are made from non-GM potatoes," it will be required to verify that IP handling was duly performed from the time such "non-GM potatoes" were cultivated, harvested and handled in various distribution and manufacturing stages until packaging at final processing stages for delivery to users.

A Farm stage

- First of all, the party cultivating and harvesting (main control constituent) or the farm issues a certificate verifying that IP handling has been performed as well as a certificate indicating particulars of control such as crop rotation record, year of harvest, quantity shipped, etc. to the cargo collector/shipper or manufacture (in the case of direct dealings with farm).
- However, when the farm and cargo collector/shipper or manufacturer have exchanged an agreement concerning the contents of the said particulars of control, the cargo collector/ shipper or manufacturer, on behalf of the farm, may verify that IP handling had been performed.
- Crop rotation records refer to evidence that can show whether "GM potatoes" were cultivated within the past five years, and if cultivated, from the fact that non-GM lineage of potatoes or other crops were cultivated, or from allowing land to lie fallow for a certain period, the crop for the year is not affected.

B Cargo collector/shipper stage

- Cargo collectors/shippers as confirming parties (for main confirmation) confirm that control by farms, the main control constituent for production and harvesting, was proper from records, etc. They issue certificates to the manufacturer verifying particulars of control such as cargo collected/ shipped quantity, method of collection/shipment, selection, storage, etc. to the effect that "non-GM potatoes" were IP handled. This is the main control constituent of their own work processes. In such cases, a copy of the certificate issued by the farm will be attached as evidence.

C Manufacture stage

- The manufacturer as a confirming party (for main confirmation) confirms from records, etc. that the farm or cargo collector/shipper as main control constituents practiced proper control and issues certificates to subsequent traders concerned verifying that control was practiced during the manufacturing process so that commingling of "GM potatoes" with products (frozen potatoes, dehydrated potatoes, etc.) manufactured using IP handled "non-GM potatoes" as ingredient could not occur. Copies of certificates issued by the farm or cargo collector/shipper will be attached as evidence.

D-H Subsequent to shipment of products from exporting country.

- Segregated transportation and storage, etc. to be implemented to separate non-segregated products.

Accordingly, when recipients of certificates pass on "non-GM potatoes" or "products manufactured using non-GM potatoes as ingredients" to the next party, they will issue similar certificates successively and again attach copies of certificates received from the previous party as evidence.

By adopting such measures, "non-GM potatoes" or "products manufactured using non-GM potatoes as ingredient" can be verified as having been IP handled from farm to the user at the final processing stage.

As for control overseas, assuming importers undertake overall responsibility, it is considered that the importer issuing such certificates is reasonable in the light of distribution phase actualities.

Again, as in cases in which products for general consumers are tightly packaged by the U.S. manufacturer and the packages carry labeling which satisfies JAS quality standard labeling, the Food Sanitation Law and other statutory labeling standards of Japan, all requirements will have been satisfied. At such a time any certification, etc. thereafter will not be required to refer to the matter of IP handling.

Certificates will be issued from the main control constituent at each stage of production, distribution and manufacturing/processing to the other party by the main confirmation constituent based on controlled records, documents, etc. Such certificates, documents, etc. shall be kept for a period of two years.

Refer to page 11 and thereafter for details.

4

Matters requiring attention

① This IP Handling Manual should be considered merely as a guideline. It is a reference to a way of doing things regardless of scale of production or dealings and should be applied with no exception. In actual use, planting circumstances of "GM potatoes" of the region concerned, the transaction methods used by each firm, form of distribution, mechanical equipment, etc. will all make a difference. A "real" manual reflecting actual conditions should be prepared by individual enterprises to indicate individual and specific ways to satisfy anticipated expectations and purposes of this manual.

② The purpose of IP handling is to control handling so that "GM potatoes" or "product manufactured using GM potatoes as ingredients" are not commingled until the time the product is packaged in a form consumers or final stage users can view to verify to a third party. In the case of potato imports in processed form, confirming IP handling will not be required subsequent to tight packaging and labeling.

IP handling is required after product stage when intermediate products and other products are distributed without being tightly packaged or when they are distributed prior to being reprocessed.

③ This manual does not require individual main control constituents to collect records of each and every stage of the past. The aim, however, is to confirm that IP handling is being carried out by each main confirmation constituent at main control constituent. Issuing a certificate to that effect makes the effectiveness of IP handling evident to third parties. The main confirmation constituent at each stage will be able to grasp the control situation up to the preceding stage by the certificate (affidavit) of the preceding stage and copies of certificates of prior stages.

- ④ When it is evident from a seed potato certificate that potatoes planted in the year concerned were not GM potatoes and inclusive of previous planting only "non-GM potatoes" were cultivated within the past five years from the crop rotation record at farm stage in IP handling, the points at which indication of possible commingling of "GM potatoes" is required at each point, guidelines, record items c through g to be specific will not be required.

When it is evident from records, etc. that all farms at which cargo is collected only cultivate "non-GM potatoes" at cargo collecting/shipping stage, record items b through e will not required.

When it is evident from records, etc. that only "non-GM potatoes" were being used as ingredients at the production stage, record items b through e will not be required.

However, in every case, certificates evidencing involvement of "non-GM potatoes" will be required.

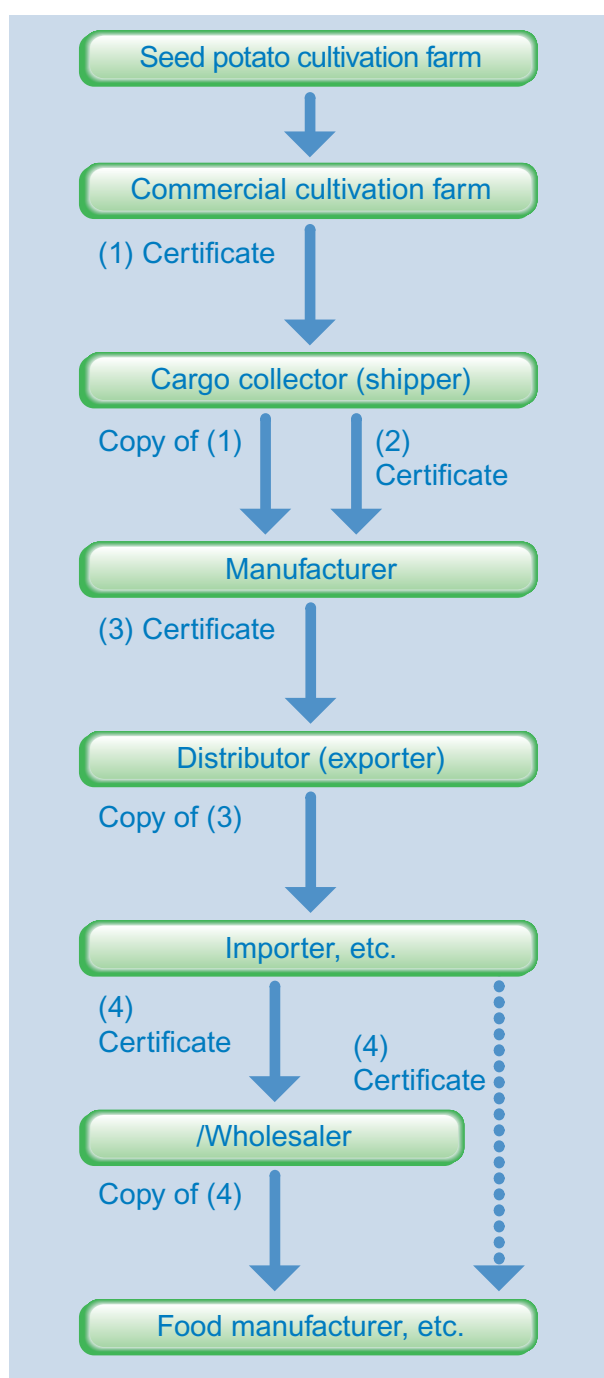
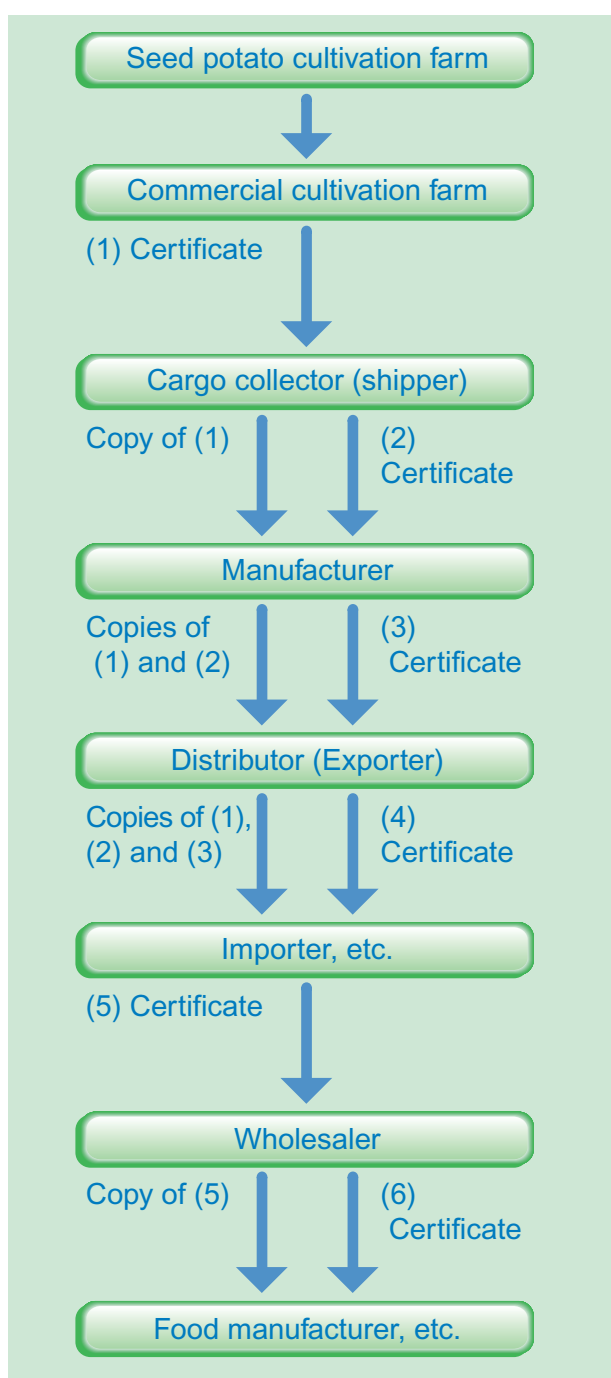


FIG Commercial Distribution Channel for U.S. Grown Potatoes and Products

(1) Cases in which possibility of commingling up to manufacturing stage exists with domestic food manufacturers, etc.

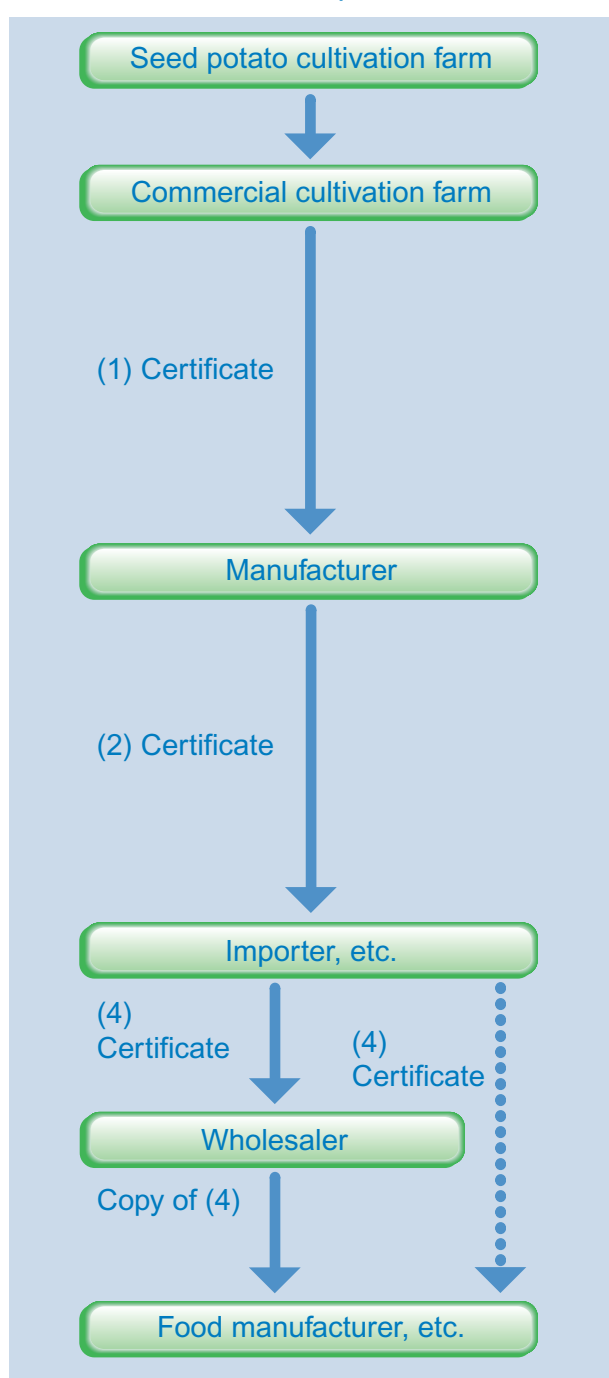
(2) Cases in which products are wrapped or packaged in form procured by end-user at overseas manufacturing stage

PATTERN 1 Cases in which a cargo collector (shipper) and/or distributor (exporter) exists between parties

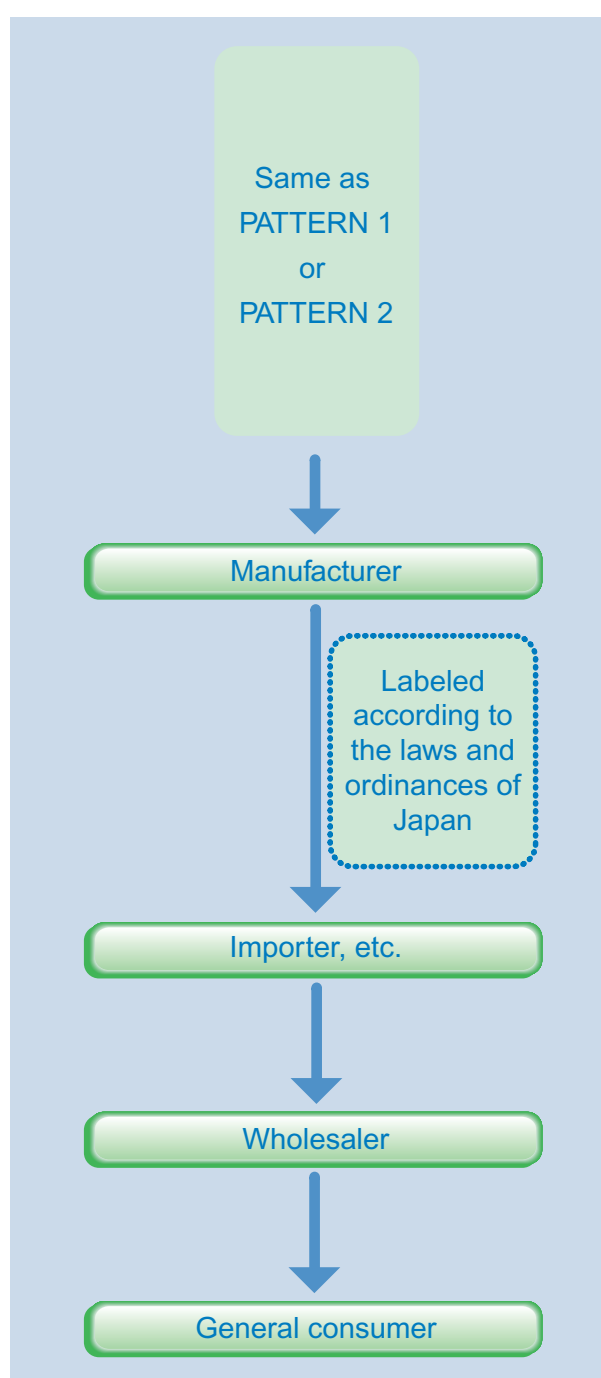


Processed therefrom together with IP Handling Certificate Issuance Flow.

PATTERN 2 Cases in which major trader buys directly from farm and sells to importer



PATTERN 3 Identical to above, but cases in which consumer-packed overseas



IDENTITY PRESERVED HANDLING

Stage of production/ distribution	Point to check	Method of handling
A. Farmer's stage	<ol style="list-style-type: none"> (1) Crop rotation record (2) Seed potato storage (3) Seed potato planting (4) Harvest (5) Agricultural tools and equipment (6) Vehicles, etc. for forwarding, collecting and transporting (7) Storage (including temporary storage) and conveying facilities 	<ol style="list-style-type: none"> (1) Check seed potato certificate or name of previously planted seed potato. (2) Check by seed potato certificate or seed potato species. (3) Method to prevent commingling does not occur to be taken in case several kinds of potatoes are stored. (4) Harvest so that non-GM crop are not mixed with other crops. (5) Use agricultural tools and equipment, such as planters, harvesters, etc. only for non-GM crops or clean if used for other crops as well. (6) Vehicles should preferably be used only for non-GM product. Where this is not possible, they should be cleaned beforehand. (7) Use storage facilities (including temporary storage) and conveying equipment exclusively for non-GM product. If staggered use is made of storage facilities and conveying equipment or if not otherwise used exclusively for non-GM product, they should be cleaned before use.
B. Cargo collector/ Shipper Stage	<ol style="list-style-type: none"> (1) Sorting line (2) Vehicles, etc. for shipment (3) Storage facilities and shipping facilities. 	<ol style="list-style-type: none"> (1) Exclusive sorting facility to be installed for non-GM products and cleaning of such facility is required if jointly used. (2) Vehicles should preferably be used only for non-GM product. Where this is not possible, they should be cleaned beforehand. (3) Use storage facilities (including temporary storage) and conveying equipment exclusively for non-GM product. If staggered use is made of storage facilities and conveying equipment or if not otherwise used exclusively for non-GM product, they should be cleaned before use.
C. Food manufacturer's stage (frozen/ dehydrated items)	<ol style="list-style-type: none"> (1) Vehicles, etc. for collecting and transporting (2) Storage facility and conveying facility (3) Manufacturing process (contents) (4) Product in progress (if such exists) (5) Packaging process (6) Storage facility and conveying facility 	<ol style="list-style-type: none"> (1) Vehicles should preferably be used only for non-GM product. Where this is not possible, they should be cleaned beforehand. (2) Use storage facilities and conveying equipment exclusively for non-GM product. If staggered use is made of storage facilities and conveying equipment or if not otherwise used exclusively for non-GM product, they should be cleaned before use. (3) Manufacturing facilities should preferably be used only for non-GM product. Where this is not possible, they should be cleaned beforehand.

IMPLEMENTATION MANUAL

Handlers	Records	Corroborators
Farmers or originators in a position to supervise farmers	<ul style="list-style-type: none"> a Crop rotation record (inclusive of previously planted potatoes) b Seed potatoes species c Quantity shipped d Date of Shipment e Storage (species, bin number, quantity, date) f Entry and discharge from storage (species, bin number, quantity, date) g Confirmation of cleaning if not used exclusively for non-GM products 	The originator (at times the manufacturer) checks the records to confirm that the handler handled the product properly in the manner shown to the left.
Cargo collectors/ Shippers	<ul style="list-style-type: none"> a Cargo collection (name of potatoes hauled in, farmer from whom purchase was made, quantity, date) b Sorting (name of sorted potatoes, quantity, date) c Storing (king/grade, warehouse number, quantity, date) d Warehousing/delivery (king/grade, warehouse number, quantity, date) e Cases in which exclusive use is not practiced for non-GM products Cleaning performance must be confirmed. 	Manufacturers are to confirm by records, etc. that the handlers took proper control measures by methods stated in the column at left.
Food manufacturer (frozen/dehydrated products)	<ul style="list-style-type: none"> a Collection (potato name/number, farmer purchased from, quantity, date) b Entry and discharge from storage (species, bin number, quantity, date) c Manufacture (species used, bin number, quantity, product name, date of manufacture, quantity manufactured) d Storage (product name, bin number, quantity, date of manufacture) e Confirmation of cleaning if not used exclusively for non-GM products 	The importer, etc. to confirm that the handlers performed reasonable control by methods shown to the left by record.

Stage of production/distribution	Point to check	Method of handling
C. Food manufacturer's stage (frozen/dehydrated items)		<p>(4) Use storage containers and storage facilities exclusively for non-GM product. If staggered use is made of storage facilities and conveying equipment or if not otherwise used exclusively for non-GM product, they should be cleaned before use.</p> <p>(5) Use packaging facilities exclusively for non-GM product. If staggered use is made of storage facilities and conveying equipment or if not otherwise used exclusively for non-GM product, they should be cleaned before use.</p> <p>(6) Use storage facilities and conveying equipment exclusively for non-GM product. If staggered use is made of storage facilities and conveying equipment or if not otherwise used exclusively for non-GM product, they should be cleaned before use.</p>
D. Distribution stage from plant to port warehouse	<p>(1) Product shipment</p> <p>(2) Vehicle, etc. for transportation</p> <p>(3) Storage facility</p>	Separate transportation and storage to take place for non-segregated products for (1), (2) and (3)
E. Transportation stage from port warehouse to Japan	<p>(1) Product shipment</p> <p>(2) Loading aboard freighter</p>	Separate transportation to take place for non-segregated product for (1) and (2)
F. Distribution stage from port warehouse in Japan	<p>(1) Unloading from freighter</p> <p>(2) Storage facility</p> <p>(3) Trucks, etc. for transportation</p>	Separate transportation and storage to take place for non-segregated products for (1), (2) and (3)
G. Wholesaler's distribution stage	<p>(1) Trucks, etc. for transportation</p> <p>(2) Storage facility</p>	Separate transportation and storage to take place for non-segregated product for (1) and (2)
H. Food manufacturer's manufacturing stage	<p>(1) Conveyance of raw material</p> <p>(2) Raw material segregated storage</p> <p>(3) Manufacturing line (dry food)</p> <p>(4) Repacking line (frozen food)</p>	<p>(1) Corroboration of non-GM agricultural produce by certificate</p> <p>(2) Separate storage from non-segregated products</p> <p>(3)(4) Lines not used exclusively for non-GM products to be pre-cleaned for (3) and (4)</p>



Handlers	Records	Corroborators
Warehouse company	a Entry and discharge from storage (product name, bin number, quantity, date of manufacture)	
Shipping company	a Discharge from storage (product name, bin number, quantity, date of manufacture)	
Warehouse company	a Discharge from storage (product name, bin number, quantity, date of manufacture)	Food manufacturer to confirm that the controller performed reasonable control by methods shown at left by records, etc
Wholesaler	a Discharge from storage (product name, bin number, quantity, date of manufacture)	
Food manufacturer	* Entry to storage, storage, discharge from storage (name of product, bin number, quantity, date) * Discharge from storage (name of product, bin number, quantity, date) * Entry to storage, storage, discharge from storage (name of product, bin number, quantity, date) * Entry to storage, storage, discharge from storage (name of product, bin number, quantity, date) * Entry to storage, storage, discharge from storage (name of raw material, bin number, quantity, date) * Manufacture (raw material used, bin number, quantity, name of product, date of manufacture, quantity manufactured) * Storage (name of product, bin number, quantity, date) * If not used exclusively for non-GM products, cleaning execution to be confirmed	

Putting Guidelines into Practice

Certain record items indicated in the Guidelines will not be required in the following cases:

- At farming stage When it is obvious from crop rotation records that only non-GM potatoes have been cultivated during the past 5 years, including potatoes planted last year and, furthermore, it is evident from the seed potato certificate that those just planted for the year are not genetically modified.
- At cargo collector/shipper's stage.....When it is obvious from records and other means that all farms from which cargo is collected cultivate only non-GM potatoes.
- At manufacturing stage.....When it is obvious from records, etc. that only non-GM potatoes are used as ingredients.

To be more specific, record items, c, d, e, f, g become unnecessary at farming stage; b, c, d, e likewise at cargo collection/shipping stage; and items b, c, d and e are unnecessary at manufacturing stage.

Example of Certificate issued by Farm

To:XXX

Date:

Farm XXX

CERTIFICATE

- (1) Name of type of product (as shown on seed potato certificate, including non-GM indication)
- (2) Crop rotation record (as above)
- (3) Year of crop
- (4) Quantity
- (5) Confirmation that cleaning was carried out when product was not used exclusively for non-GM product (For entire facility, equipment, etc. concerned)

This is to certify that the above farm product was grown, stored and transported to avoid commingling with GM farm products.

Note:

We have made best effort to ensure segregated handling of the above product under strict controls, but as unintentional commingling cannot be avoided from the nature of segregated production, distribution and control, we cannot guarantee that the product is 100% non-genetically modified.

Remarks

- * The "To:XXX" above refers to either collector/shipper or manufacturer. "Farm XXX" will include the address.
- * In (2) above, the last year potatoes were planted in the field concerned and kind/variety is to be stated.
- * When GM potatoes have never been planted at the farm concerned, this should be mentioned in the certificate.

Example of Certificate issued by Manufacturer

To:XXX	Date:
	XXX Co., Ltd.

CERTIFICATE

(1) Name of product
(2) Date of manufacture
(3) Quantity
(4) Container No.

This is to certify that the above product has been selected, manufactured and packaged by us to avoid commingling with GM farm products made from certified ingredients (copy of certification attached).

Remarks

- * The "To:XXX" above refers to the importer and "XXX Co., Ltd." should also give the address of the company (plant).
- * When all ingredients procured by the plant concerned are non-GM potatoes all year around, this should be mentioned in the certificate.

Example of Certificate issued by Importer

To:XXX	Date:
	XXX Co., Ltd.

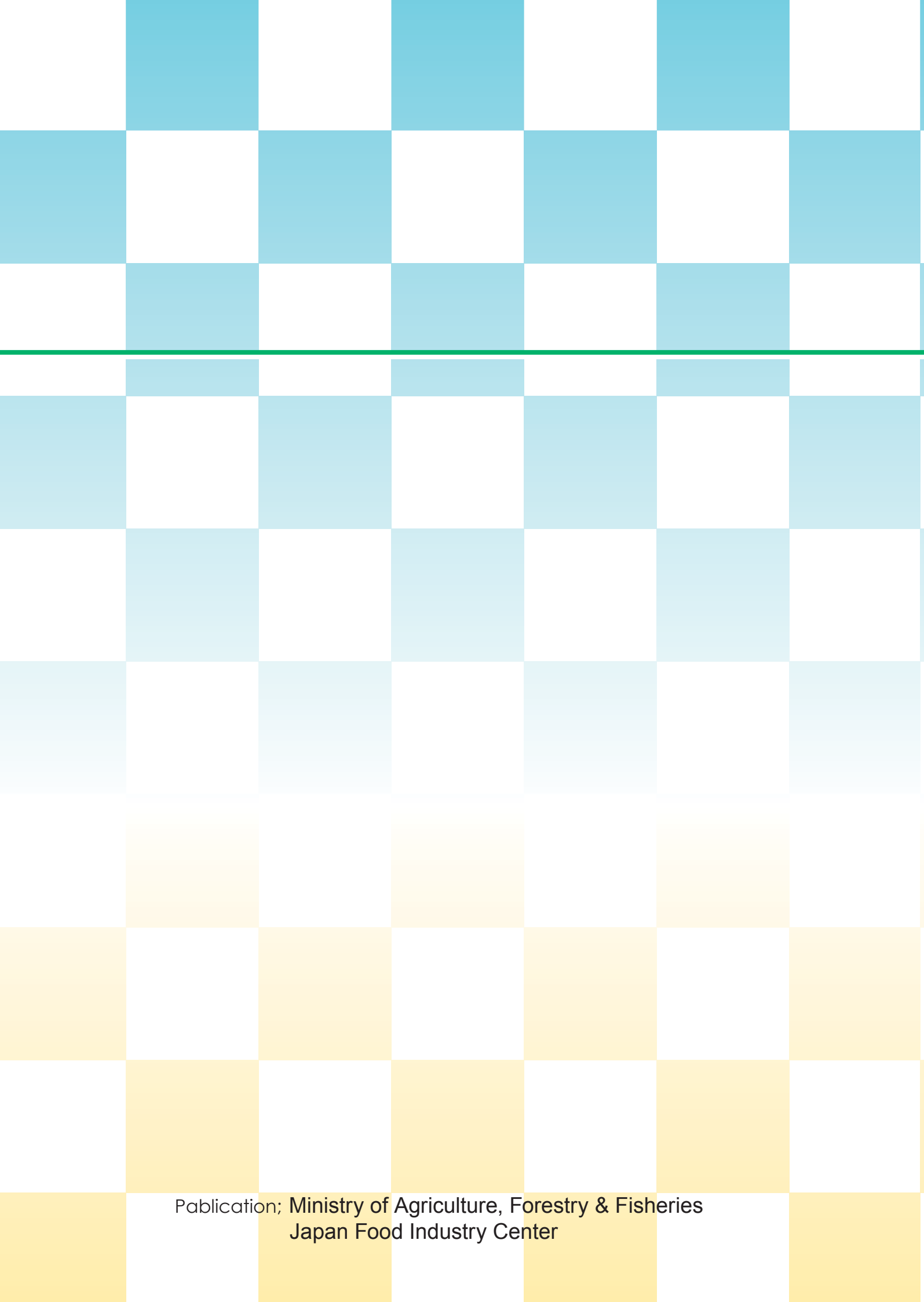
CERTIFICATE

(1) Name of U.S. manufacturer/plant
(2) Name of article
(3) Date of manufacture
(4) Quantity imported

This is to certify that the above product was manufactured by the manufacturer mentioned on the certificate (copy of certification attached) and any commingling with GM farm products was avoided.

Remarks

- * The "X" in "To:XXX" above refers to food product manufacturer, wholesaler, food service industry, etc. and "XXX Co., Ltd." should include the address.
- * Name of plant includes packaging plant.
- * When all ingredients procured by the manufacturer of plant concerned all year around are non-GM potatoes, this should be mentioned in the certificate.



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