



THAI AGRICULTURAL STANDARD

TAS 9000 PART 2-2011

**ORGANIC AGRICULTURE
PART 2: ORGANIC LIVESTOCK**

**National Bureau of Agricultural Commodity and Food Standards
Ministry of Agriculture and Cooperatives**

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PART 2: ORGANIC LIVESTOCK**

National Bureau of Agricultural Commodity and Food Standards

Ministry of Agriculture and Cooperatives

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**Technical Committee on the Elaboration of Thai Agricultural Standard for
Organic livestock**

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Regarding the Ministry of Agriculture and Cooperatives notification on 8 February B.E. 2548 (2005) on the Thai Agricultural Standard entitle Organic Agriculture PART 2: Organic Livestock (TAS 9000 PART 2-2005) which has been published in the Royal Gazette, dated 17 May B.E. 2548 (2005), it is required to update the contents of this standard to cope with the changing situation. The Agricultural Standards Committee deems it necessary to revise such standard to be use as guidelines for further development and better recognition of Thailand's organic livestock – farming both domestic and international levels.

This standard is based on the following documents:

GL 32-1999, Rev.1-2001. Guidelines for the Production, Processing, Labelling and Marketing of Organically Produced Foods. Joint FAO/WHO Food Standards Programme, FAO, Rome. 31p.

IFOAM. 2007. The IFOAM Basic Standards for Organic Production and Processing version 2005. International Federation of Organic Agriculture Movements, Germany, August 2007.

Council Regulation (EEC) No 2092/91 of 24 June 1991 on Organic Production of Agricultural Products and Indications referring thereto on Agricultural Products and Foodstuffs: Consolidated Text 14.05.2008. Office for Official Publications of the European Communities. Brussels, Belgium.



NOTIFICATION OF THE MINISTRY OF AGRICULTURE AND COOPERATIVES
SUBJECT: THAI AGRICULTURAL STANDARD:
ORGANIC AGRICULTURE PART 2: ORGANIC LIVESTOCK
UNDER THE AGRICULTURAL STANDARDS ACT B.E. 2551 (2008)

Whereas the Agricultural Standards Committee deems it necessary to establish an agricultural standard for Organic Agriculture part 2: Organic Livestock as a voluntary standard in accordance with the Agricultural Standards Act B.E. 2551 (2008) to promote such agricultural commodity to meet its quality and safety standards.

By virtue of Section 5, Section 15 and Section 16 of the Agricultural Standards Act B.E. 2551 (2008), the Minister of Agriculture and Cooperatives hereby issues this Notification on Establishment of Thai Agricultural Standard for Organic Agriculture part 2: Organic Livestock (TAS 9000 PART 2-2011), as follows:

1. The Notification of the National Committee on Agricultural Commodity and Food Standards entitled the establishment of Thai Agricultural Commodity and Food Standard: for Organic Agriculture part 2: Organic Livestock, dated 9 February B.E. 2548 (2005) is repealed.
2. The Thai Agricultural Standard for Organic Agriculture part 2: Organic Livestock (TAS 9000 PART 2-2011) is established as a voluntary standard, details of which are attached herewith.

Notified on 2 September B.E. 2554 (2011)

(Mr. Theera Wongsamut)
Minister of Agriculture and Cooperatives

THAI AGRICULTURAL STANDARD
FOR ORGANIC AGRICULTURE PART 2:
ORGANIC LIVESTOCK

1 SCOPE

This standard establishes the requirements for production, processing and labelling of organic livestock produce and products. This standard does not cover bee and other insect farming intended for food or food products.

The standard shall be applied in conjunction with the Thai Agricultural Standard on Organic Agriculture Part 1: The Production, Processing, Labelling and Marketing of Organic Agriculture (TAS. 9000 : PART 1).

2. DEFINITIONS

Referring to TAS 9000: PART 1 as well as the followings:

2.1 Livestock means the terrestrial animals raised on farm for food and food products, excluding wild animals.

2.2 Organic livestock means livestock raised under the organic agriculture system.

2.3 Farm means the total agricultural area used for crop and animal production.

2.4 Parallel production means raising, handling and processing of both organic and non-organic animals in the same production unit.

3. PRINCIPLES OF ORGANIC LIVESTOCK

This section shall be referred to Section 3 of TAS 9000: PART1 as well as the followings:

3.1 Organic livestock shall be based on the harmonious relationship among land, crop and livestock and the essence of physiological and behavioral needs of livestock including sufficient feeding of qualified organic feedstuffs.

3.2 Livestock production is one of agriculture activities related to land. Herbivores shall have access to pasture for grazing and all other animals shall have access to outdoor space to exercise under specific conditions such as late gestation or newborn, inclement weather or pasture for grazing limited by local authority. Nevertheless, animal welfare shall be taken into consideration.

3.3 The local ecosystem and biodiversity of the production area such as forest, bushes, natural corridor and wetlands shall be maintained to conserve the habitats of plants and insects, including endemic species.

3.4 Number of animals shall be suitable for the available space taking into account crop on farm, balance diet, soil fertility, soil erosion and water pollution control, e.g. land rotation prevention of over grazing and proper dispersion of animal droppings.

3.5 Livestock management shall emphasise on natural breeding maintaining of good health, diseases prevention, avoiding the use of chemicals and veterinary drugs, practicing of animal welfare and reducing of stress. The use of animal by-products as feedstuffs shall be avoided.

3.6 If more than one kind of organic livestock are raised on the same farm, all of them shall comply with the requirements of this standard. If not, the farmer shall clearly separate the production system to prevent the loss of organic integrity.

3.7 In case of parallel production, farmer shall clearly separate the production system to prevent any contamination and loss of organic integrity.

3.8 For Management of animals and animal products, the safety of both farmers and consumers shall be taken into consideration.

4. ORGANIC PRODUCTION REQUIREMENTS FOR LIVESTOCK

This section shall be referred to Section 6.2 of TAS 9000 : PART 1 as well as the followings:

4.1 Livestock origin

4.1.1 The selection of species, breeds or strains, and breeding techniques of livestock shall be in accordance with the principles of organic agriculture as follows:

- (1) Ability of the animals to adapt to the production environment
- (2) Ability of the animals to encounter the diseases by genetically resistant species, breeds and strains

4.1.2 Characteristics of the animals suitable for organic production shall be as follows:

- (1) Born in the farm under continuous organic production system.
- (2) Originate from organic parents.
- (3) Animals shall be raised continuously throughout the organic production period.
- (4) No switching back and forth between organic and non-organic during the whole production period

4.1.3 If animals referred to in section 4.1.2 are failed, farmers are allowed to obtain non-organic animals from conventional farms by prior approval from the certification bodies of the following cases:

- (1) To expand or produce different breeds of livestock in response to market demand or there is a new naturally developed breed.

- (2) To establish a new herd, in case of high mortality rate.
- (3) To introduce new male breeder.
- (4) If there is no commercial organic livestock available in the area, conventional animals may be brought in as early age as possible, for instance, animals after weaning or chicks aged less than 3 days after hatching. Farmers shall also provide a timeframe for procuring livestock from organic source to be used in production system.

4.1.4 Animal or animal products as referred to in section 4.1.3 shall be certified as organic products after completing the requirement of transition period as shown in Table 1.

4.2 Conversion to organic livestock

4.2.1 Land management for organic livestock production, including crop and forage requires transition period, 12 and 18 months for annual and perennials, respectively. Farmers shall follow the requirements provided in TAS 9000 : PART 1.

4.2.2 Any organic agriculture certified farms or production areas which introduce non-organic animals to raise on farm, the produce and products intended to market as organic livestock shall follow the transition period as shown in Table 1.

In case of mammals, animals should be introduced immediately after weaning. In case of poultry, chicks should be introduced not more than 3 days after hatching.

Table 1 Transition periods for organic livestock, by species
(Section 4.1.4 and 4.2.2)

Livestock	Transition period
Bovine <ul style="list-style-type: none"> <li data-bbox="225 479 488 512">- Meat production <li data-bbox="225 551 488 584">- Veal production <li data-bbox="225 665 488 698">- Milk production 	<ul style="list-style-type: none"> <li data-bbox="571 479 1382 512">- 12 months and in any case at least three quarters of their lifetime. <li data-bbox="571 551 1410 622">- 6 months, calf should be introduced immediately after weaning and age of calf should be less than 6 months. <li data-bbox="571 665 1410 768">- 90 days, after this period, dairy product may be classified as “organic milk of the transition period” Six months later; it can be certified as “organic milk”.
Caprine and ovine (sheep and goat) <ul style="list-style-type: none"> <li data-bbox="225 920 488 954">- Meat production <li data-bbox="225 992 488 1025">- Milk production 	<ul style="list-style-type: none"> <li data-bbox="571 920 724 954">- 4 months <li data-bbox="571 992 1410 1095">- 90 days, after this period, dairy product may be classified as “organic milk of the transition period” Six months later; it can be certified as “organic milk”.
Porcine <ul style="list-style-type: none"> <li data-bbox="225 1218 488 1252">- Meat production 	<ul style="list-style-type: none"> <li data-bbox="571 1218 724 1252">- 4 months
Poultry <ul style="list-style-type: none"> <li data-bbox="225 1404 488 1438">- Meat production <li data-bbox="225 1476 336 1509">- Eggs 	<ul style="list-style-type: none"> <li data-bbox="571 1404 911 1438">- Whole production cycle <li data-bbox="571 1476 708 1509">- 6 weeks

4.2.3 If pasture and animals are introduced at the same period of transition, when the pasture land is certified, the livestock production shall still meet the transition period as indicated in Table 1 in order to certify as organic livestock products.

4.2.4 The certification bodies for organic livestock can adjust the transition period or specified different conditions from this standard, as in the following cases:

- (1) The transition period of pasture or an outdoor space for exercise for non-herbivore may be adjusted as of section 4.2.1.
- (2) Cattle, horses, sheep and goats from free ranch or dairy cows at the beginning of transition period may adjust according to the land use history.

4.3 Feeds

4.3.1 The quality of feed shall be taken into account. Raw materials should be mostly produced on own farm. They may also come from other sources if they fulfill the requirements of organic agriculture or natural materials taken from area that has never been used for agriculture or materials grown from the area that prohibited chemicals have never been used for at least 3 years. In addition, farmers shall provide evidence to the certification body for approval.

4.3.2 At the beginning of the transition period, ruminant feed shall be at least 70% dry matter of organic agriculture and at least 65% dry matter for monogastric feed. For feed that does not come from organic agriculture, raw materials shall derive from naturally occurring plants, animals or minerals.

4.3.3 In case the production area cannot supply 100% organic raw materials, feed for ruminant shall contain not less than 90% dry matter from organic agriculture and feed for monogastric animals shall be of 80% dry matter thereof. Both cases are based on annual feed needs and prior approval by the certification body.

4.3.4 Under unexpected conditions, such as natural disaster, unfavourable climatic condition, the farmers are allowed to use non-organic feed for a limited percentage and time approved by the certification body on a case by case basis.

4.3.5 The nutritional requirement and digestive behaviour of animals shall be taken into account in the formulation of feed as follows:

(1) For mammals, they shall be fed with maternal milk for a specific suitable period of time for each species, for instance, at least 2 months for calves, 6 weeks for lambs and kids and 4 weeks for piglets.

(2) For herbivores, such as cattle, sheep, goat or rabbit shall be fed with roughages, fresh, dry or silage, for not less than 60% dry matter per day. The percentage may be varies depends on season or lactation period, however, the amount of roughages shall not less than 50% dry matter. Farmers shall have management plans for pasture, utilization and grazing ready for the certification body.

(3) For broiler, grains shall be required as energy source.

(4) Roughages, fresh, dry or silage shall be supplied daily to poultry and swine.

(5) For ruminant, silage shall not be only the source of feed throughout the production cycle.

4.3.6 Animals shall have access to sufficient clean water.

4.3.7 Feed raw materials shall be complied with the principles as follows:

(1) Permitted raw materials or substances under the Feed Quality Control Act, B.E. 2525 and its amendments shall be used and do not violate the principles of organic agriculture.

(2) Those raw materials or substances for the well being and welfare of the animals shall be necessary.

(3) Those raw materials or substances originated from plants, natural minerals or animals are essential to the physiological and innate behaviour of each species.

(4) Raw materials of plant origins from non-organic production can be used by referring to sections 4.3.2, 4.3.3 and 4.3.4 and such raw materials shall not go through any chemical process.

(5) Raw materials as sources of minerals, vitamins or provitamins in feed formulation shall originate from nature. In case of short supply or unexpected condition, synthetic materials can be used with detail of clear source of origin and production process.

(6) Animal-derived raw materials, except milk and milk products, fish and fishery products, are not recommended. However, it is subjected to the laws and regulations of individual country.

(7) Mammals by-products such as meat and bone meals, except milk and milk products, are prohibited for ruminants.

(8) Synthetic nitrogen or non-protein nitrogen (NPN) compounds are prohibited.

4.3.8 Feed additives and processing aids shall follow the principles as follows:

(1) Binders, anti-caking agents, emulsifiers, stabilizers, thickeners, surfactants and coagulants shall come from natural sources.

(2) Anti-rancidity agents shall come from natural sources.

(3) Preservatives shall come from natural acids..

(4) Colour additives, flavouring agents and appetite stimulants shall come from natural sources.

(5) Prebiotics, enzymes and probiotics are allowed.

(6) Antibiotics, anticoccidial drugs, chemically-synthesised veterinary drugs and growth promoters or other substances for the purposes of growth stimulation or increasing productivity are prohibited.

(7) Sea salt, rock salt, enzymes, yeast, whey, sugar and its by-products e.g. molasses and honey are permitted for using as additives for fermenting roughages and processing aids. These substances shall not be derived from genetically modified organism.

(8) When the weather condition is not suitable for fermenting roughages, acid producing bacteria e.g. lactic, acetic, formic, propionic and other natural acids can be used with the approval by the certification body.

4.4 Health management

4.4.1 Farmers shall take into account the disease prevention and stress reduction so as to keep animal healthy and build natural immunity by complying with the principles as follows:

(1) Select appropriate breeds or strains as specified in section 4.1.1.

(2) Animal husbandry practices appropriate to the requirements of each species, encouraging animal sanitary and health, strong resistance to disease and the prevention of infections.

(3) The use of quality organic feed together with regular exercise, grazing and/or outdoor roaming to encourage natural immunity.

(4) Suitable stocking densities and space shall be provided not to be overcrowded or to cause adverse effect to animal health.

(5) Biosecurity shall be applied appropriately on farm such as animal sanitary, vaccination, the use of biological extracts, sick animal quarantine, quarantine of new introducing animals and prevention of disease carrier.

4.4.2 In case of animal illness or injury, treatments shall be applied immediately, although such treatments shall make them lose their organic livestock status. In addition, animals shall be isolated from the herd where necessary and put into suitable housing. The farmers shall record the details of treatments, veterinary drugs used and withdrawal period.

4.4.3 Treatments shall be applied according to the principles as follows:

(1) In case animals are sick or injured, medicinal plants, natural minerals or alternative medicine shall be used in preference to chemically-synthesised veterinary drugs or antibiotics, by appropriate considering of condition and species of animals.

(2) If the treatments of the abovementioned in item (1) are failed, veterinary drugs or antibiotics under the supervision of a veterinarian shall be used. Withdrawal periods shall be double of that indicated on the package leaflet. In case of no such indication, withdrawal period shall be at least 48 hours.

(3) In an endemic or disease suspected area or animal health problem still pertaining from the management and use of permitted veterinary drugs to control a disease including any necessary practice abided by laws, vaccines, antiparasitic drugs and other veterinary drugs may be allowed as necessary and the withdrawal periods shall be clearly clarified.

If the animal has been treated with chemically-synthesised veterinary drugs and/or antibiotics more than twice a year or once for the animal less than 1 year old, these animals shall not be sold as organic livestock, moreover, such animals shall undergo the conversion period.

(4) Hormonal treatments shall be under the supervision of a veterinarian.

4.4.4 Antibiotics used for disease prophylaxis is prohibited.

4.4.5 Growth promoters or stimulants affecting animal growth or increasing yield are prohibited.

4.5 Farm management, animal transport and slaughter

4.5.1 Farmers shall provide good animal husbandry practices, compatible with nature and take into account the principles of animal welfare.

4.5.2 Farmers shall establish land management plan. Forage crops shall be mostly produced on farm or by nearby network farms. Recycling of farm by-products, renewable use as animal feed and proper management of animal droppings shall be practiced in order to maintain sustainable soil nutrients.

4.5.3 Breeding shall be practiced according to the principles as follows:

(1) Selection of appropriate breeds or stains as specified in section 4.1.1.

(2) Natural reproduction technique is preferable, if it is necessary, artificial insemination is allowed.

(3) Embryo transfer techniques and hormone inducing ovulation are prohibited.

(4) Genetically engineering techniques are not allowed.

4.5.4 Operations or any physical interference with animal body are generally prohibited unless it is necessary and no other appropriate management methods available, the following cases are allowed:

(1) For safety and welfare reasons, tail docking, needle teeth clipping, debeaking and dehorning with prior approval of the certification body.

(2) For the quality improvement of produce and products such as castration of male pigs to prevent boar taint.

(3) For marking or animal registration for genetic improvement such as ear marking. Heat branding is prohibited.

(4) For animal health such as tail docking of lambs,

Those practices shall only be done at appropriate age by skilled workers and not cause suffering to animals.

4.5.5 Environment and housing conditions

Environment and housing conditions shall be appropriate to the animal behaviour as follows:

(1) Sufficient area for the animals to freely express their normal patterns behavior (Annex B)

(2) Ensuring that social herd animals are kept in an appropriate group according to their species

(3) Prevention of abnormal behaviour, injury and disease

(4) Preparedness in case of accident or emergency such as fire, power failure and/or machine dysfunction

4.5.6 Transport of animals and their products

(1) Animals shall be handled with care and avoid any activities that cause stress, panic, injury and suffering. Electric prods and chemicals and veterinary drugs affecting animal behaviour such as tranquilizers or stimulants are prohibited.

(2) Animal transport shall take into consideration of animal welfare by minimising stress and suffering.

(3) Animals and their products such as milk and eggs shall be prevented from the cause of mixing or contaminating non-organic livestock by providing such as clear identification.

4.5.7 Slaughtering

(1) Animal stress and suffering shall be minimised depending on the relevant laws and regulations.

(2) Control system shall be established to prevent the mixing against non-organic livestock or unpermitted chemicals along the chain of slaughtering, carcass dressing and storage.

4.6 Housing and free-range

4.6.1 Housing construction shall be suitable to the climatic condition provided that animals can roam freely outdoor.

4.6.2 Housing conditions shall suit animal behaviour as follows:

- (1) Easy access to water and feed
- (2) Sufficiently provide shelters to protect animals from sunlight and rain, clean with natural air flow for animal comfort

4.6.3 If animals have to be temporary confined in the house, farmers shall provide sufficient areas for animals to move or have an access to the outdoor. If there is proof of necessary confinement as follows:

- (1) Unfavourable weather conditions such as too cold, too hot and natural phenomenon.
- (2) Animal safety and health such as newborns.
- (3) Protection of water resources, environment, plants and soil fertility such as during the pasture growing season or incomplete pasture cropping.
- (4) The final fattening phase of animals for meat production can take place indoor, provided that this indoor period does not exceed one fifth of their lifetime, not more than 3 months for beef cattle and 2 months for pigs.
- (5) In case of small herd operated by small farmers such as isolation of male breeder or applying bedding materials for swine herd in the confinement to express their innate behaviour.

4.6.4 Housing space shall be considered as follows:

- (1) Comfortable for each animal species, breeds, condition and age.
- (2) Proper to size of animal herd and gender.
- (3) Sufficient for natural movement.

4.6.5 Housing, pens, equipment and tools shall be cleaned and/or disinfected properly to avoid contamination and accumulation of the pathogens.

4.6.6 Ruminants shall have access to pasture. When weather is suitable, other animals shall have access to outdoor space as well.

4.6.7 In open range, appropriate and sufficient shelters shall be provided to protect the animals from sunlight and rain or any extreme weather conditions.

4.6.8 Animals released on public or pasture land shall be in appropriate number not to damage soil fertility and pasture.

4.6.9 Forest or public grazing land for herding shall be free from chemical applications for at least 3 years. The animal density shall not impact the environment. If non-organic animals are roaming in the same area, inspection is required with prior approval by the certification body.

Mammals

4.6.10 Outdoor space for animal exercise shall be provided with the exception of breeder parents or animals at the fattening period.

4.6.11 Housing floor shall be smooth, slip-proof for safety of animals. Slatted floors is not allowed, if it is necessary, part of the floor may be slatted.

4.6.12 Housing floor shall be strongly constructed, dry and clean with appropriate space for size and species of animals. Bedding materials shall be sufficient and clean.

4.6.13 Solitary confinement and stall barns (calf) are prohibited except prior approval from the certification body.

4.6.14 Sows shall be reared as a herd, except during gestation and lactation period.

4.6.15 Rabbits shall not be kept in cages.

Poultry

4.6.16 Poultry shall be reared in open-range conditions with sufficient space for exercise.

4.6.17 Sufficient water source areas shall be provided for ducks or any water fowl for their innate behaviour.

4.6.18 Housing floor shall be sturdy and covered with bedding materials such as husk, straw, saw dust, sand or hay. Housing for layers shall be provided with sufficient nests and resting perches. They shall be proper size and arranged according to the species and their innate behaviour.

4.6.19 Artificial light for production growth acceleration is prohibited.

4.6.20 The housing shall be allowed for appropriate withdrawal period before introducing a new herd.

4.7 Waste management

Principles for waste management are as follows:

4.7.1 Do not cause soil and water degradation.

4.7.2 Do not cause nitrate and pathogenic bacteria contamination in soil and water.

4.7.3 Encourage the appropriate recycling of soil nutrients.

4.7.4 Avoid burning of waste and other activities that do not comply with organic agriculture, except carcass burning for the disease control.

4.7.5 Waste management facilities such as fermented ponds shall be well-designed to prevent the contamination to soil and water sources.

4.7.6 Applying manure to pasture in the proper quantity that does not affect the quality of both ground and surface water.

4.8 Record keeping

Information shall be completely recorded and updated according to the requirements of the certification body. Examples of record forms are shown in Annex C.

5 HANDLINGS, STORAGE, TRANSPORT, PROCESSING AND PACKAGING

To be in compliance with section 7 of TAS.9000: PART 1.

6 LABELLING AND CLAIMS

To be in compliance with section 8 of TAS.9000: PART 1.

7 REQUIREMENTS OF PERMITTED SUBSTANCES OTHER THAN THOSE SPECIFIED IN APPENDIX A

To be referred to section 9 of TAS.9000: PART 1.

8 INSPECTION AND CERTIFICATION SYSTEMS

To be in compliance with section 10 of TAS.9000: PART 1.

APPENDIX A

PERMITTED SUBSTANCES FOR THE PRODUCTION OF ORGANIC LIVESTOCK

This section shall be in compliance with TAS 9000 PART 1 as well as the followings:

A.1.1 Any substances such as fertilizer, soil conditioner, animal health and product quality or food preparation, food preservation and storage shall be in compliance with the national laws and regulations including trading partner countries.

A.1.2 Exception for the following items such as quantity and frequency of use in the certain purposes may be specified by the certification body or concerned authorities.

A.1.3 Any substances, although allowed in the primary production shall be carefully applied in accordance with technical principles in order to prevent the incorrect application which may impact land or farm ecosystem.

A.1.4 Substances permitted for organic livestock production are listed in Tables A.1-A.4. The lists are subjected to addition or deduction by the approval of the certification body, however, they shall comply with the requirements in section 7.

Table A.1 Substances for disease carrying animals, rodents and insect control

Substances	Requirements
Pyrethrins from <i>Chrysanthemum cinerariaefolium</i>	- Subject to be approved by certification body or concerned authorities.
Sulphur	- Subject to be approved by certification body or concerned authorities.
Rodenticides	- Subject to be approved by certification body or concerned authorities.

Table A.2 Ingredients of non-agricultural origin

INS ^{1/}	Substances	Requirements
Substances used for animal products		
170	Calcium carbonate	- for dairy products, not to be used as colouring additives.
270	Lactic acid	- for dairy products, used for acid-base adjusting.
290	Carbon dioxide	-
300	Ascorbic acid	- antioxidant
322	Lecithin	- from unbleaching or treatment of organic solvent process. - for dairy products, and milk formula infant food. - fat and oil products and mayonnaise
406	Agar	-
407	Carrageenan	- for dairy products
410	Locust bean gum	- for dairy and meat products
412	Guar gum	- for dairy and meat products in hermetically sealed container. - for egg products
413	Tragacanth gum	-
440	Pectin, unmodified	- for dairy products
450iii	Tetrasodium pyrophosphate	- for meat products only
509	Calcium chloride	- for dairy products
938	Argon	- Modified atmosphere packaging
941	Nitrogen	- Modified atmosphere packaging
948	Oxygen	- Modified atmosphere packaging

^{1/}INS = International Numbering System

Table A.2 Ingredients of non-agricultural origin (Cont.)

INS	Substances	Requirements
Substances approved for animal products		
	Flavouring agent	<ul style="list-style-type: none"> - Any substance or product labeled as natural flavouring shall be used in accordance with the law. - Permitted only as necessary and in accordance with the law, use only in food products.
	Drinking water	-
	Salt	<ul style="list-style-type: none"> - Containing NaCl or KCl as major component in food processing - Permitted only as necessary and in accordance with the law, use only in food products.
	Prebiotics, Probiotics and Enzymes	<ul style="list-style-type: none"> - Food processing - Genetically engineered bacteria or enzymes produced derived by these bacteria are prohibited - Permitted only as necessary and in accordance with the law, use only in food products.
	Trace element	<ul style="list-style-type: none"> - Vitamins, oils and fats, essential amino acids and other nitrogen-containing compounds - Permitted only as necessary and in accordance with the law, use only in food products.

Table A.3 Processing aids which may be used for the preparation of products of agricultural origin

INS	Substances	Conditions for use
Processing aids for organic livestock products		
170i	Calcium carbonate	-
509	Calcium chloride	- Firming agents for cheese production
270	Lactic acid	- Thickener for dairy products and acidity regulator for cheese production
500i	Sodium carbonate	- Acid neutralizing agent for milk products
Processing aids for other food processing		
	Prebiotics, Probiotics and Enzymes	- Processing aids derived from genetically engineered bacteria and their enzymes are prohibited.

Table A.4 Cleaning agents

Substances	Requirements
Javel water	- Subject to be approved by certification body or concerned authorities.
Biodegradable detergent	- Subject to be approved by certification body or concerned authorities.
Bio-Fermented Juice	- Subject to be approved by certification body or concerned authorities.
Sodium carbonate	- Subject to be approved by certification body or concerned authorities.
Hydrogen peroxide	- Subject to be approved by certification body or concerned authorities.
Iodine	- Subject to be approved by certification body or concerned authorities.
Potassium Permanganate solution	- Subject to be approved by certification body or concerned authorities.
Alkaline Water	- Subject to be approved by certification body or concerned authorities.
Caustic potash	- Subject to be approved by certification body or concerned authorities.
Lime	- Subject to be approved by certification body or concerned authorities.
10% Bleaching solution	- Subject to be approved by certification body or concerned authorities.
Phosphoric acid	- Subject to be approved by certification body or concerned authorities.

APPENDIX B
REARING AREA FOR ORGANIC LIVESTOCK

(Section 4.5.5)

Table B.1 Housing area

Animals	Housing area	
	Stage	Stocking density
Laying hens	pullet	not more than 10 animals/m ²
	laying period	not more than 5 animals/ m ²
Broiler	-	not more than 20 kg/ m ²
Breeder	pullet	not more than 10 animals/ m ²
	laying period	not more than 5 animals/ m ²
Laying ducks	laying period	not more than 10 animals/ m ²
Swine	male breeder	not less than 4.4 m ² /animal
	female breeder	not less than 1.32 m ² /animal
	farrowing pen	not less than 3.6 m ² /animal
	farrowing crate	not less than 1.32 m ² /animal
	covered creep	not less than 0.44 m ² /animal
	nursery	not less than 0.3 m ² /animal
	growing –finishing	not less than 1 m ² /animal
Dairy cows	stall barn	not less than 4 m ² /animal
Meat goats	-	approximately 1 m ² /animal
Meat sheep	-	approximately 1 m ² /animal
Dairy goats	-	approximately 1 m ² /animal

Source: Referring to related Thai Agricultural Standards on good agricultural farming practices to each species.

Table B.2 Outdoor area

Animals	Weight (kilograms)	Exercise area which not including pasturage (m²/animal)
Cattle (Breeder and Meat)	≤100	1.1
	≤200	1.9
	≤350	3
	>350	3.7 or least 0.75 m ² /100 kg
Dairy cow	-	4.5
Cattle male breeder	-	30
Goat and sheep Kid and lamb	-	2.5
		0.5
Farrowing pig Piglet before 40 days of age	-	2.5
Fattening pig	≤50	0.6
	≤85	0.8
	≤110	1
Nursery pig over 40 days of age	≤30	0.4

Poultry	Rotating outdoor area (m²/animal)
Laying hen	4
Poultry for meat (permanent houses)	
- broiler	4
- duck	4.5
- turkey	10
- goose	15
Poultry for meat (mobile houses)	2.5

Source: Council Regulation (EEC) No 2092/91 on organic production of agricultural products and indications referring thereto on agricultural products and foodstuffs: Consolidated Text 14.05.2008

