

# Guideline for Basic Standard for Organic Rice Cultivation

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## 유기벼 재배 기본규약의 기준

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## 국문요약

CODEX의 유기농업기준에 대하여 기본적으로는 공감하고 있으나, 아시아적 기후의 특성과 농가당 소유면적이 유럽이나 미주·오세아니아 지역에 비하여 상대적으로 너무 협소한 점을 감안하여 아시아의 유기벼 재배농가들에게 과중한 부담을 주지 않을 수 있는 선에서의 유연성을 부여해야 할 것이다.

윤작이나 휴경의 경우, 지역에 따라 벼-딸기 등의 과채류-벼-토마토 등 과채류-벼 행태나, 벼-보리 또는 호밀 등의 사료 또는 녹비작물-벼-자운영 등의 사료 또는 녹비작물-벼 행태의 윤작 또는 녹비작물 재배형태의 윤작 또한 유기재배로 인정해야 할 것이다. 완충지배 역시, 일정거리 보다는 경계선상에 주작물보다 상당히 키가 큰 다른 식용이나 녹비용 작물을 재배하면서 이웃 관행농장으로부터의 영농화학물질의 비산을 막아줄 수 있는 조치만으로도 유기재배 인증획

득이 가능토록 해야 할 것이다.

제조작업 또한 오리를 이용할 경우, 기본적인 제조효과는 물론 해충포식이 이루어지며, 배설물에 의한 자연적인 시비가 원활히 이루어지게, 벅대를 튼튼하게 자극시켜주며, 고랑사이의 공기 유통 촉진과 흙탕물에 의한 잡초 발아억제효과 등 다양한 부대효과를 올릴 수 있게 된다. 왕우렁이 제조법 또한 논외 건조와 백로 등 조류의 접근만 차단해 주면 완벽한 제조가 이루어지고 있으며, 불시 경우에 의한 제조법도 유기농업 실천에 크게 기여할 수 있는 최선의 방안으로 활용되고 있는 중이다.

## 1. Introduction

Basically, I would like to agree to "The guideline for producing, processing, labelling, and distribution of the organic food" by CODEX-Alimentarius. However, we should fully reflect the flexibility of different crops, fruit, and vegetables produced, farming scale and method, and climate difference between continents and latitudes. Especially, in case of Korea, Asian monsoon climate, typhoon and flood frequently break out with the hot temperature of 30℃ for 3 months(from early June to late August-the period of crop's best growing). Also, Korea is unfavorable to geographical condition as various damage by insects and disease can occur, yearly rainfall concentrates on this period(almost 70%).

It is not possible for Korean farmers to pause cultivating because average cultivating area per one family is only 1.4 hectare. It is also not desirable to compel farmers to rotate crops to low profit crops or green grass for dairy feed because they can't make a basic living. The total farming area cultivated by 1.30 million farming family, in Korea, is 1,924,000 hectare, and 1.48 hectare per one farming family. Among them, rice paddy of 1, 163, 000 hectare occupies 60.4 %. Among these paddies, the area of 50% -including southern and partial central area, double-cropping is possible. But 50% of the central and northern part, only one-cropping is possible because the temperature of mid-winter is below -10~-15℃. Only special case like setting up green house can limitedly make double-cropping possible.

## 2. Rotation

Considering these conditions, the following crop rotation should be certified, being adequate for producing organic farming.

### 2-1. Southern area(from northern latitude 34° 00' ~36° 30' )

2-1-1. lowland rice → strawberry → lowland rice → tomato or strawberry → lowland rice

2-1-2. lowland rice → barley → lowland rice → wheat → lowland rice

2-1-3. lowland rice → leaf vegetable → lowland rice → root vegetable → lowland rice

### 2-2. Northern area(from northern latitude 36° 30' ~38° 30' )

The following simple crop-rotation should be certified as cultivation of organic rice because only the rye for green manure and feed is possible, but no other plants can grow during the winter because the temperature is below -15°C from December to February next year.

2-2-1. lowland rice → rye for green manure or fodder → lowland rice → rye for green manure or fodder → lowland rice

## 3. Buffer zone

In case of buffer zone, an average rice field is 0.31ha as farming field of 1.48ha is scattered in 4.7 places. the 50% of the farming field is lessened if buffer zone, 8 meters around the paddy, is urged. Thus, organic farming can not be real before collectivization of the whole field.

### 3-1. Request to the conventional farming family nearby

They will be requested that non-windy day should be selected when pesticide is disseminated.

### 3-2. No aerial prevention of the breeding and extermination

On the premise that aerial prevention carried out by the government is stopped, division by the current rice-paddy border should be admitted.

### 3-3. Confirmation by final analysis

The remaining environmental hormone like pesticide, insecticide, herbicide, growing hormone should not be detected through the final analysis of produced rice.

## 4. Weed control

Non-chemical weed control in the lowland rice paddy includes mechanical weed control and natural weed control through breeding ducks, mud snails, carp, and shrimp. However, weed control using ducks is most effective and widely advised as mechanical weed control has imperfect of the weed control and manpower problems.

### 4-1. Weed control using ducks

Using this method, the green grass and harmful insects-obstacles of rice farming-are utilized as the food of ducks. So this can be the small-scale circulation farming.

#### 4-1-1. How to put ducks into the paddy

5 days after rice-planting, purchasing young wild ducks, you can pasture 25-day-old ducks in the basis of a duck per rice paddy of 42 square meters. The ideal area of one block is 3,300 square meters, 80 ducks for one block

#### 4-1-2. Rice paddy fence

You can put up the fence using mosquito net, 90 centimeters high along the rice paddy border, and the fence should be built up using post(150 centimeters) with range of 5 meters.

#### 4-1-3. Feeding & protection from wild animals

Ducks eat young grass, including barnyard grass and harmful insects like rice weevil. However, feed can be given a little everyday. And you can protect ducks from animals

by sending out & locking up properly in the barracks.

#### 4-1-4. Various effects

##### 1) Weed control

- (1) Eat every grass with its wide beak
- (2) Eat grass seed in the soil
- (3) Control germinative power of the grass, making muddy water
- (4) The muddy water sinks on the seed and leaf of the grass, and buried in the soil.

##### 2) Harmful insect control

Though it is not perfect, compared with the number of rice worm, spider, it is true that the number of spiders overwhelmingly increased in the duck-pastured rice paddy.

##### 3) Muddy water effect

- (1) Stirring up the muddy water, the oxygen quantity in it increases.
- (2) Fermentation promotion of duck's dung and organic material due to the agitation
- (3) Removal of the obstacle caused by the gas
- (4) Increasing of the water temperature and heating effect

##### 4) Providing nutrient

The duck provide the paddy with organic fertilizer with its excrement after eating harmful insects and grass.

##### 5) Stimulation effect of the rice leaf

Touching the rice leaf with its beak and body can make the rice much more stronger.

##### 6) Ventilation promotion and germ-control

Making a move between loose leaves of the rice, the duck can prevent the rice from having any disease.

#### 4-2. Weed control using the big mud snail

In case of Korea, it is very effective in southern part, but not in northern part. On the premise of contained water cultivation, it is the best place where erosion rate in the

soil is high and water is warm. Making use of seed snails(40~50 kilograms per hectare), they should be scattered in the whole area after rice-planting. Weed control effect is perfect and the rice is absolutely safe but can not get rid of the barnyard grass.

#### 4-2-1. Things you should take care of

- 1) keep the paddy not to dry up
- 2) control the damage by white herons, crows  
(covering the nylon net over the paddy or setting up the explosive machine)
- 3) the young snail seed should be scattered as many as possible
- 4) keep the water path properly when you get the water out of the paddy  
(The risk of snail's drifting away)
- 5) snails can not eat barnyard grass so you need your own barnyard grass control

#### 4-3. weed control by untimely sprouting

30~40 days before the rice-planting, plowing is needed in the less grass paddies. And tilling in the soil by machine in thick-grassed paddies. When it is done, sprouting rate increases as you put the lime powder(50 kilograms per 10a) and microorganism fermentation compost( 500~1000 kilograms) into the paddy. When the grass seed sprouts, you can eliminate most of the grass by tilling the soil by machine 2 times in the interval of 10 days.

#### 4-4. other methods

Excepts the methods stated above, you can use different weed controls-crucian carp, paper covering, transplanting by machine, black vinyl covering, rice bran fermentation oil cake, non-toxic herbicide. But these methods should gradually be introduced as the result of the research is pronounced.

## 5. Materials for harmful insect control

Natural resources under the code of CODEX-Alimentarius and physical methods like pheromone trap, electric trap, air-inhaler could be used.

## 6. Fertilizer management

### 6-1. Fertilizing before rice-planting

Various animal excrement and fermented compost which put effective microorganism with the carbonate materials like rice straw, rice bran, sawdust, wood chip, fallen leaves can be used.

### 6-2. Fertilizing after rice-planting

You can use high-quality organic fertilizer which is fermented with microorganism, rice bran, various kinds of oil cake and fish meal etc.

## 7. Storing, packing & delivering

Follow the guideline of CODEX alimentarius

### Literature sited

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