PNS/BAFS 141:2014

CODE OF GOOD AGRICULTURAL PRACTICES FOR RICE

(Illustrative Guide)

Source: PhilRice

Republic of the Philippines
Department of Agriculture
BUREAU OF AGRICULTURE AND FISHERIES STANDARDS
BPI Compound, Visayas Avenue, Diliman Quezon City
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Code of Good Agricultural Practices (GAP) for Rice

(Illustrative Guide)

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What is Good Agricultural Practices?

The Code of Good Agricultural Practices for Rice (GAP for Rice) is a set of consolidated food safety and quality standards covering production, harvesting and on-farm post-harvest handling and storage of rice. This code of practice is also based on the concept of Hazard Analysis Critical Control Points (HACCP) and quality management principles following the farm to table continuum.

Why should I follow Good Agricultural Practices?

1 **Ensures Food Safety**

identifies possible sources of contamination including mitigating measures and strategies to minimize or avoid them.

2 **Enhances Quality of Produce**

plans production, harvest handling– describing hazards that may occur, causes of quality hazards, and preventative measures.

3 **Contributes to Environmental Management**

negates the potential harmful effects of farming practices through adherence to strategies

4 **Ensures Workers' Health, Safety and Welfare**

manages risks posted to workers' health, safety and welfare.


Source: PhilRice


Source: PhilRice

ILLUSTRATIVE GUIDE

Who can benefit from Good Agricultural Practices (GAP)?

Farm operators/workers

Work in a farm production site that ensures their safety and welfare.

Traders

Facilitate better trade regionally and internationally.

Consumers

Availability of safe and quality food.

Environment and Society

Enhance sustainable production practices.

What are the minimum requirements of GAP?

Selection of Production Site

Know the farm history

- Knowledge of prior land use helps identify potential hazards.
- A suitable field is fertile, free from physical and chemical contaminants.

Available Water

Primary and secondary water sources that provide sufficient water throughout the cropping season are identified.

Soil assessment

Adjoining crops are evaluated as well as the degree of fertilizer and pesticide usage.

Adjacent places

Nearby areas such as cemeteries or highly urbanized zones can be source of contamination. Thus, risk mitigating measures must be implemented if these places cannot be avoided.

Soil type identification

Proper land preparation methods are determined through identification of soil type and slope with the assistance of an Agricultural Extension Worker (AEW).


Source: PhilRice


Source: PhilRice

Plowing and Harrowing

Plowing and harrowing done two to three times to ensure good tilth, and uniform soil texture, facilitating better growth and effective weed control.


Source: PhilRice


Source: PhilRice


Source: PhilRice

Selection of Planting and Seed Materials

Selection of Seeds

Choose seeds that are best suited to the soil type of the farm and use high quality seeds that are resistant to most of the prevailing pests in the locality as prescribed by an AEW.

Look for NSIC certification tags

Approved varieties of high quality seeds are certified by the National Seed Quality Control Services (NSQCS).

When high quality seeds are used:

- Lower seed rate but more vigorous & more uniform crop germination
- More efficient crop establishment activities
- More efficient harvesting activities
- Less pest problems

Source: PhilRice

Recommended requirements

Seeding rate for transplanted rice:

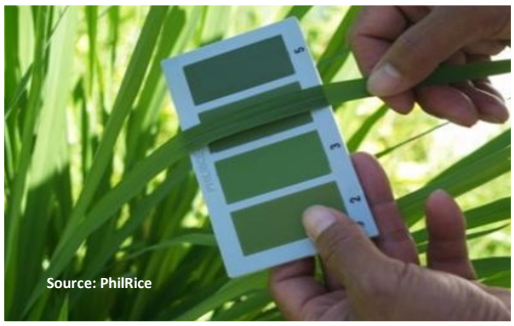
- 20-40 kg/ha registered seeds/certified seeds for inbred varieties
- 15-20kg/ha for hybrid varieties

Seedbed area:

- 400m^2 for the required seeding rate/ha

Number of hills per square meters:

- at least 25 hills/m^2 of healthy seedling



Identifying the needed nutrient

Leaf Color Chart (LCC) is a tool used to visually assess the nitrogen status of rice crops by determining the greenness of the rice leaf (right photo). Minus-One Element Technique (MOET) helps determine the deficient nutrient in rice farms such as N,P, K, S, Zn and Cu (left photo).

Proper storage

Fertilizers are stored separately from other farm inputs, are properly labeled, and kept away from children and animals .

Application of organic fertilizer

Use only fully decomposed organic materials as fertilizers in order to utilize available nutrients.

Water Management

Water use

Use appropriate amount of water for growth and care of the crop.

Proper maintenance

Water ways are maintained and free of rubbish.

1. Identify

Recognize the type of weeds, insect pests and diseases.

Common insect pests

Black bug *Leaf hopper* *Leaf folder* *Stem borer* *Plant hopper*

2. Control

Employ appropriate biological control measures that promotes conservation of beneficial organisms instead of resorting to chemical controls. Chemical controls should be the last resort if all methods fail.

Example of biological control

Chichirica planted around the lot acts as insect repellant.

Weeding for transplanted rice

Manual or mechanical weeding such as the use of a push weeder should be done within two weeks after crop establishment.

3. Consult AEW

Ask for help

Coordinate with municipal agriculturist for ways to identify and control pests includes weeds and control the pest observed in the field

Methods of Harvesting

When to harvest paddy rice

Paddy rice are harvested when 85-90% for manual harvesting and 90-95% for combine harvester (shattering varieties) or 90% (non-shattering varieties) mature and are golden yellow.

Good harvest and post-harvest practice

Paddy rice are immediately threshed and dried to prevent grain quality deterioration.

Manual harvesting by hand

Combine harvester

Harvesting using a reaper

Portable thresher

Post-harvest Practices

Use clean containers

Use clean sacks for threshed palay.

Palay drying

Sun drying of rice is done in clean drying pavements. Excessive drying, fast drying and rewetting of grains are to be avoided as they cause grain fissure that affects the quality of produce.

Fumigate to eliminate rice pest

Rice weevil ('Bukbok') are small insects that commonly attack rice reducing the grain quality by creating hollows .

Records and Traceability

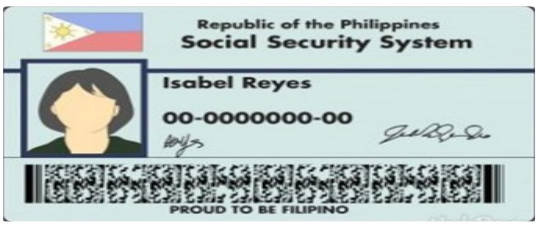
Records

Documents such as application of fertilizers and pesticides, personnel and health records, staff training are maintained.

Workers' Health, Safety and Welfare

Personal Protective Equipment.

Wearing of appropriate clothing and protective gadgets during pesticide application to ensure safety and health of farm workers.



Employees' protection and benefits

Provision of insurance for farm workers.

Safety first

First aid kit is available and readily accessible in the farm.

Sanitary measure

Toilet facility is provided and situated at considerable distance from the rice field and water source to avoid contamination.

Governing laws

Burning of rice straws is prohibited.

Animal Housing

Livestock and other animals are kept in an animal house as they may pose risks such as disease, damage and contamination if kept astray.

Container disposal

Observe proper disposal of chemical containers.

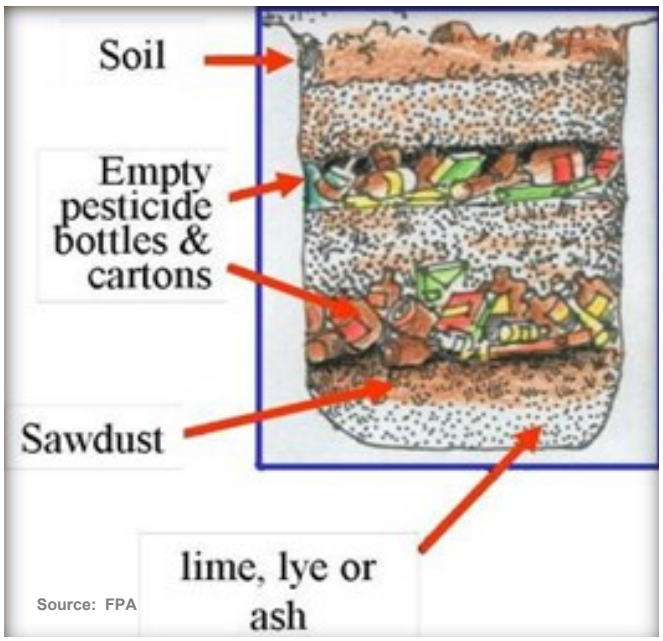


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Photo References

Cover page

[Untitled image of rice field cited]. (2018). Retrieved from Philippine Rice Research Institute

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[Untitled image of rice plant cited]. (2018). Retrieved from Philippine Rice Research Institute

[Untitled image of people measuring cited]. (2018). Retrieved from Philippine Rice Research Institute

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[Untitled image of farmer planting cited]. (2018). Retrieved from Philippine Rice Research Institute

[Untitled image of truckload of rice sack cited]. (2018). Retrieved from Philippine Rice Research Institute

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[Untitled image of rice field cited]. (2018). Retrieved from Bureau of Agriculture and Fisheries Standards

[Untitled image of water canal cited]. (2018). Retrieved from Philippine Rice Research Institute

[Untitled image of vegetable field cited]. (2018). Retrieved from Philippine Rice Research Institute

[Untitled image of cemetery near the field cited]. (2018). Retrieved from Bureau of Agriculture and Fisheries Standards

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<u>Under Soil type identification (Left to Right)</u>

[Untitled image of soil type with tools beside cited]. (2018). Retrieved from Philippine Rice Research Institute

[Untitled image of contoured field cited]. (2018). Retrieved from Philippine Rice Research Institute

<u>Under Plowing and harrowing (Left to Right and Bottom)</u>

[Untitled image of plowing the field with tractor cited]. (2018). Retrieved from Philippine Rice Research Institute

[Untitled image of harrowing the field cited]. (2018). Retrieved from Philippine Rice Research Institute

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Selection of seeds (Top Left Photo)

[Untitled image of seed cited]. (2018). Retrieved from International Rice Research Institute

Look for NSIC certification tags (Top Right Photo)

[Untitled image of NSIC certification tags cited]. (2018). Retrieved from Bureau of Agriculture and Fisheries Standards

Bottom Photo

[Untitled image of people carrying basket of seedlings to field cited]. (2018). Retrieved from Philippine Rice Research Institute

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Identifying the needed nutrient (Left to Right)

[Untitled image of leaf color chart cited]. (2018). Retrieved from Philippine Rice Research Institute

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Proper storage

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Application of organic fertilizer

[Untitled image of decomposed organic materials cited]. (2018). Retrieved from Philippine Rice Research Institute

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Water use

[Untitled image of rice field cited]. (2018). Retrieved from Philippine Rice Research Institute

Proper maintenance

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Identify (Left to Right)

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Green leafhopper [Online image]. (n.d.). Retrieved March 20, 2019 from knowledgebank.irri.org/ training/fact-sheets/pest-management/insects/item/green-leafhopper

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Control (Left to Right)

[Untitled image of example of biological control cited]. (2018). Retrieved from Bureau of Agriculture and Fisheries Standards

[Untitled image of weeding transplanted rice cited]. (2018). Retrieved from Bureau of Agriculture and Fisheries Standards

Consult AEW

[Untitled image of an AEW cited]. (2018). Retrieved from Philippine Rice Research Institute

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Top Photo:

[Untitled image of rice plant cited]. (2018). Retrieved from Philippine Rice Research Institute

Good harvest and post-harvest practice

Left Side: Top to Bottom

[Untitled image of manual harvesting by hand cited]. (2018). Retrieved from Philippine Rice Research Institute

[Untitled image of harvesting using a reaper cited]. (2018). Retrieved from Philippine Rice Research Institute

Ride Side: Top to Bottom

[Untitled image of combine harvester cited]. (2018). Retrieved from Philippine Rice Research Institute

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Post-harvest Practices (Right Side: Top to Bottom)

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Records and Traceability

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