Pollution Free
POULTRY FARM
(PFPF)

A Knowledge Management Product of Caritas India by

Dr. Haridas V R

Pollution Free Poultry Farm (PFPF)

Published by:

Caritas India, CBCI Centre
Ashok Place, Goledakkana
Newdelhi - 110001

Printed @

Jim Offset Palakkad -2534688

Natural
Economical &
Healthy

Pollution Free

POULTRY FARM

(PFPF)

For Healthy Meat, Egg &
Organic Manure

CONTENT

PFPF: The method to boost family income

Fr. Frederick D' Souza

Executive Director, Caritas India

The book on Pollution Free Poultry Farm (PFPF) is found to be very good guide for increasing the family income through rearing natural chicken and making organic composts. This book narrates various steps involved in setting up PFPF including poultry shed, making of various growth promoters and microorganisms, and how it can be done in the households. This can also be an occupational therapy for family members. The compost generated from the shed will help enriching land, put healthier food on the platter and boost the local economy. This book is an also an attempt to assist and guide people working for the socio-economic development of the small and marginal farmers and also those involved in promoting livelihood measures. It will be of much use to those who are willing to promote PFPF without the use of external feeds and inputs.

PFPF for family income and composting

Fr. Paul Moonjely

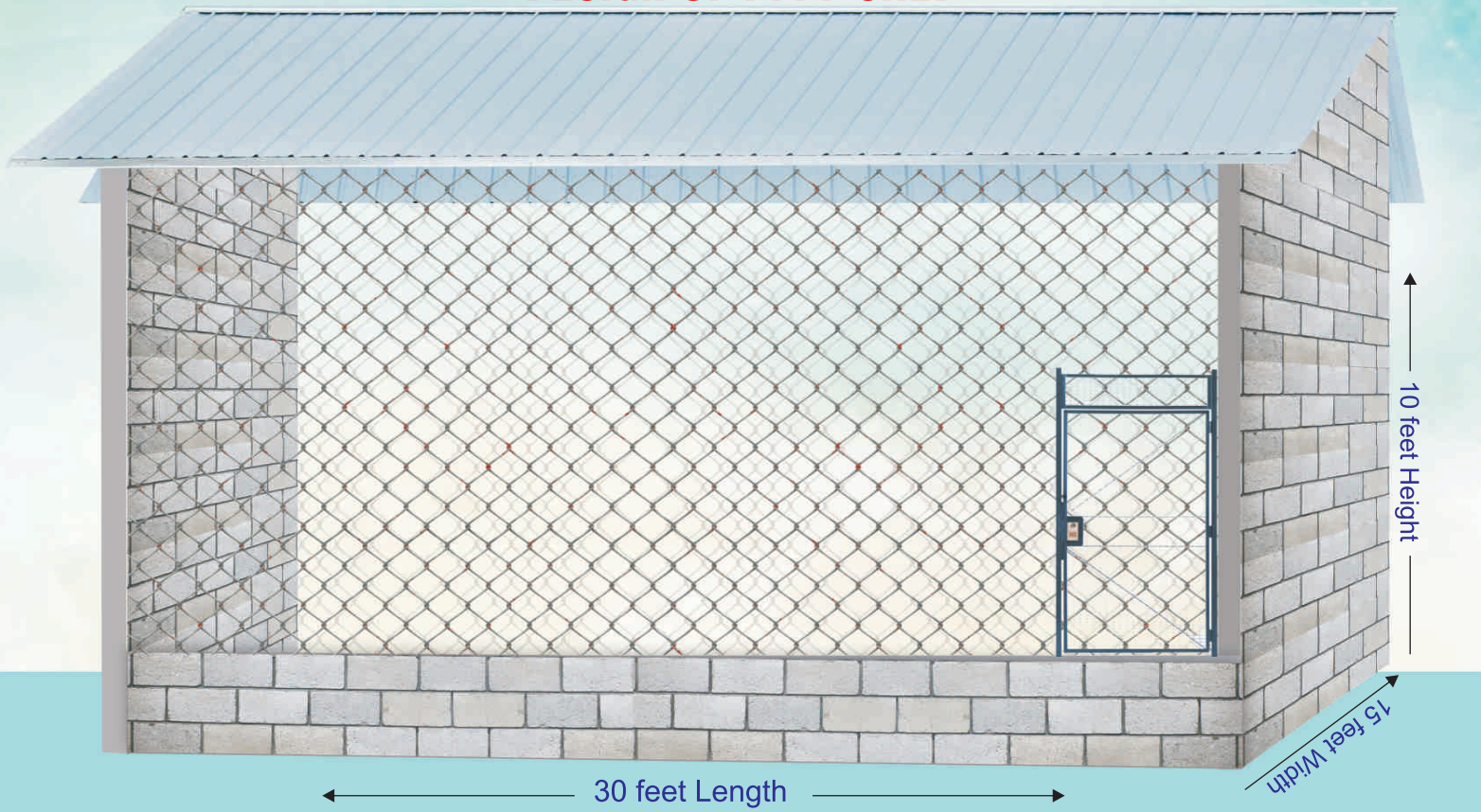
Asst. Executive Director, Caritas India

Climate adaptive and environment friendly livelihood initiatives are value addition alternative sources of income for the small holder farmers, who are caught up in the trap of poverty cycles. By doing Pollution Free Poultry, it is also possible to make sufficient composting for the vegetable and nutrition gardening. The use of Indigenous Micro Organisms, Lactic Acid Bacteria Fermented Plant Juice (FPJ), Lactic Acid Bacteria (LAB) and Oriental Herbal Nutrients (OHN) helps in natural growth of the birds and in the process external feed will be reduced drastically and the compost can be sold or used for the gardening.

Introduction: Pollution Free Poultry Farm (PFPF) is a natural farming method of rearing chicken in an organic system. One of the distinct advantages of this innovative system is that it does away with the pesky smell that normally surrounds poultry farms. The floor of the shed is filled with soil, rice husk, rice bran, anthill soil, charcoal, Oriental Herbal Nutrients (OHN), Fish Amino Acids (FAA), Fermented Fruit Juice (FFJ), Indigenous Micro Organisms (IMO) and Lactic Acid Bacteria (LAB). The organic floor composition ensures that birds get part of their feed from the floor itself. The composite floor bed is designed to absorb bird droppings and thus stop formation of foul smell on the floor. The organic floor bed eventually becomes very good manure. This method on one hand, ensures healthy growth of birds and on the other, provides quality compost from the bed. With this method, landless and smallholders can earn incomes from poultry activities and compost sale.

PFPF: A suitable option for Family Farm: The floor of chicken housing should be soil as birds more comfortable living on soil. They do great with very little soil. Temperature should not be artificially controlled. Heat from fermenting compost will help even for small chicks. Feed for hatchlings should consist of whole brown rice grains and bamboo leaves to strengthen the intestines. Chicken shed needs to be designed in such a way that there is no bad smell, no emission, no cleaning needed, and no disease. The shed is constructed to suit their habits, instincts, and behaviors. It is important to enrich the population of microorganisms on the floor in order to break down chicken feces. This contributes to the absence of smell in the chicken house. The feces do not need to be removed unless needed for compost. The chickens feed on the fermented products of their feces, so taking out all the feces may affect the chickens negatively. The floor serves as feed producer, fertilizer factory, and waste treatment plant all in one.

DESIGN OF PFPF SHED



Natural Rearing of chicks: In PFPF, birds are kept in houses which have sufficient spaces and natural heating, fresh water, and natural feeds. The unique design does not require frequent cleaning and wastewater disposal as conventional poultry unites require. Apart from these advantages, PFPF units require no treatment with chemicals and with minimal labour, can increase profitability of poultry activities. For the poor households, PFPF can be very useful in terms of supply of chicken and manure for crops.

The agricultural byproducts can be used as chicken feed in order to have inter-dependency in humans, animals and crops. A family working together to take care of chickens and perform other tasks will form a close relationship between humans, animals and crops. This can also be an occupational therapy for family members. The compost generated from the shed will help enriching land, put healthier food on the platter and boost the local economy.

Chicken housing should have a soil bed as the first layer as birds normally prefer soil surfaces. Soil bed, which has great temperature control properties, will ensure that no artificial temperature control will be needed. Fermentation of compost which will occur on the floor will help in the development of chicks. Feed for the hatchlings should consist of whole brown rice grains and bamboo leaves to strengthen the intestines of birds. Chicken shed needs to be designed in such a way that there is sufficient ventilation and ease in cleaning so that the birds do not get any infection. Sheds are constructed to suit their habits of birds.

Galvanized zinc sheets need to be used for roofing, steel wire mesh for partition walls/curtains and the soil-based floor must be carpeted with 3-7 cm thick shredded rice straw. Fermented plant juice (FPJ), LAB and Indigenous Micro Organism (IMO) are added to the mixture for soil floor, enzymes from straw carpet and bird droppings.

Water needs to be sprayed 1-2 times a week. Home-made chicken feed to be given once daily. The newly-hatched chicks are fed whole brown rice grains along with bamboo leaves. The feed should be prepared in such a way that rice husk and fresh green grass constitute 1/3 of the total feed for adult chickens. This type of feed toughens the intestines of the birds and makes them healthier.

Micro-organisms to reduce the smell in the bed: It is important to intensify microorganisms on the floor for ensuring that the bird droppings are broken down quickly. The primary reason for the smell is droppings of birds. When the droppings are composted quickly, the smell in the chicken house also reduces. The droppings need not be removed unless for the purpose of making compost. The chicken feed on the fermented products off their droppings, so taking out all droppings may affect birds negatively as it will lead to feed shortage. The floor of the shed for birds serves as feed producer, fertilizer factory and waste treatment plant, all rolled into one. Drinking water needs to be supplied to the birds with perforated pipes. The perforations have to be made in such a way that the holes are slightly tilted back from the position of birds. It is necessary to ensure constant supply of fresh water in the shed.

Different ingredients required for a 450-square feet bed are as follows:

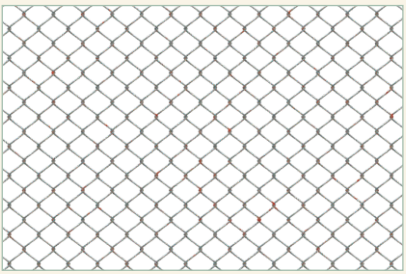
Red soil: 4500 Kg (10 Kg per square feet)

Rice husk: 90 Kg (200 gram per square feet)

Charcoal:4.5 Kg (10 gram per square feet)

Anthill soil:90 Kg (200 gram per sqft)

Bricks



Wire Mesh

G I Sheet

Water : 200 litres

Rice bran:45 Kg (100 gram per square feet)

Paddy straw:45 Kg (100 gram per square feet)

Cow Milk:500ml

Rice washed water:1.5 litres

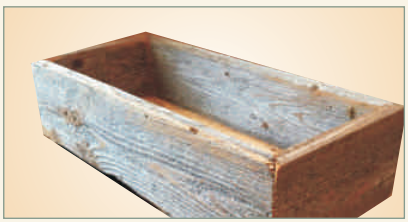
Yellow Coloured Fruits:500 gram

Jaggery:1.5 Kg

Ginger:500 gram

Fresh Fish :500 gram

Half cooked rice:1 Kg



Wooden Box : 1

PFPF works on Indigenous Microorganisms: This method works on Indigenous Micro organisms (IMO) which has been successfully tried by agriculturists, academic researchers, non-profit organizations and farmers alike. IMO has been found very useful in removing bad odor from animal wastes, hastening composting and contributing to crops' general health. In PFPF, IMO 1, IMO 2 and IMO 3 need to be made in addition to Lactic Acid bacteria (LAB), Fish Amino Acids (FAA), Fermented Fruit Juice (FFJ), Oriental Herbal Nutrients (OHN). This will give the base for poultry bed and procedures of making, mixing and application are narrated below:

Making of Indigenous Microorganism

Ingredients required for making IMO 1

Cooked Organic Rice: 500 gram
Wooden Box : 1 Number (12 inch length, 8 inch width 4 inch height)
Plain Paper/Cloth: 1 Number



Steps to Making IMO 1: After cooking, put the cooked rice it in a wooden box. Avoid using plastic or aluminum boxes. Cover the mouth of the wooden box with a cloth or plain paper and tie it properly to avoid water or small insects from getting in to the box. Dig a small pit under a tree or in a bamboo grove or wherever a thick mat of leaves is formed. Bury the three-fourth of the covered wooden box in the pit and leave it on the ground for three days. IMO-1 will be ready in 3 days.

Ingredients required for making IMO 2

IMO 1: 500 gram
Jaggery: 500 gram
Container: 1 Number
Plain Paper/Cloth: 1 Number

Steps to Making IMO 2: After transferring IMO 1 to a container (of glass or earth), add Jaggery or sugar molasses and cover the jar with a plain paper or cloth. Fasten the cover with a rubber band and keep it under the shade, in a cool place for 6 hours. The IMO-2 can be stored for 2 years. IMO 1 is the collection of the Indigenous Micro Organisms from your environment on the cooked rice (rice and microbes). IMO 2 is the process of fermentation of the organism in a sugar source. Ants used to be attracted to the sugar and rice solution. Hence, the glass container to be put inside a large container with a few inches of water at the bottom to avoid the entry of ants in the container.

Ingredients required for making IMO-3

IMO-2: 300 ml
Rice Bran: 45 Kg
Water: 21 Litres

Steps to Making IMO 3: IMO 3 can be made on one side of the poultry bed. Mix well the ingredients such as 300 ml of IMO 2, 300 gram of charcoal powder and 45 kg of rice bran with 21 litres of water and keep it at a height of 30 to 40 cm. After 5to 7 days, there will be fungus being formed which is the IMO 3. It can be applied on the soil with a layer of mulching to retain moisture and provide a dark environment for the further growth of indigenous micro organisms.

Ingredients required for making Fermented Fruit Juice (FFJ)

Yellow colored Fruits: 250 gram
Jaggery: 250 gram
Glass Container: 1 Number

Steps to making FFJ : The ingredients of FFJ need to be mixed well and kept in a container for five days with its mouth covered with a cloth or plain paper. This can be applied to plants too to promote flowering and fruit setting. FFJ is a nutritional activation enzyme and is very effective in natural farming. The fruits like organic banana, papaya, mango etc. can be used for making FFJ. It is used to revitalize crops, livestock and humans

Ingredients required for making Lactic Acid Bacteria (LAB)

Rice Washed Water: 500 ml
Fresh Milk: 1.5 litres
Jaggery: 500 gram

Steps to Making LAB : Wash the rice grain and collect the first rinses of cloudy water in a glass bottle to 2/3 full. Cover the mouth of the jar with a plain paper and keep it in shade for 3 days. After 3 days, the fermentation takes place and there will be a mat of semi-solid material floating on the top of the plain (transparent) liquid in the jar. Collect only the plain liquid and add 1.5 litres of fresh milk to it and keep it in shade for another 3 days. After 3 days, a semi-solid white layer will form on the top portion and a yellow colored liquid. The yellow colored liquid is the LAB. The solution could be used soon after it is made. It could also be stored for up to 180 months and its quality could be further increased by adding 10 gram jaggery.

Ingredients required for making Oriental Herbal Nutrients (OHN)

Ginger: 500 gram
Jaggery:500 gram
Glass Jar: 1 number

Steps to Making OHN : Chop the ginger into small pieces or crush it well and add jaggery to it. Bottle the mix in the glass jar, cover it with a white paper and keep it for 5 days to ferment. OHN is very important in natural farming system as it revitalizes crops and activates its growth. Application of OHN discourages the growth of anaerobic, potentially pathogenic microbes and encourages aerobic microbes in the soil.

Ingredients required for making Fish Amino Acids (FAA)

Blue or Black colored Fish: 500 gram
Jaggery: 500 gram
Charcoal powder: 10 grams
Glass Jar: 1 Number

Steps to Making FAA: Cut the colored fish into very small pieces and add powdered jaggery and charcoal powder to the chopped fish. Transfer the mix into an airtight glass jar and cover it well. Keep the jar in shade or a cool place for 15 days. If the solution needs to be used as manure for plants, add 100 ml cow urine. It is rich in nutrients and various type of amino acids. FAA also stimulates the activity of micro organisms.

Preparing the Poultry Bed : Steps to preparing a poultry bed: The dimension of the poultry bed is 30 ft (length), 15 ft (width) and 10 ft (height) with the longer part facing East or West direction. This positioning helps in the easy entry of sunlight. Boundary walls of 10 feet height need to be constructed on north and south boundaries. The height of the boundary wall should be 1.5 feet on the east and west side of the bed and a wire mesh to be placed on the boundary of the bed for better protection of the bed.

Preparing the floor for poultry rearing :

Step 1: On completing the bed, the floor of the bed has to be filled with soil and other ingredients. The first step is to mix well 500 ml of Lactic Acid Bacteria (LAB), 300ml of Fermented Fruit Juice (FFJ), and 200 liters of water into 4500 kilograms of soil. Keep it on one side of the bed and leave it for 7 days on a small heap.

Step 2: After 2 days, the next part of the floor material needs to be prepared with 90 kilograms of paddy husk, 4.5 kilograms of charcoal, 90 kilograms of Ant Hill Soil (AHS), 45 kilograms of IMO-3 and 300 millilitres of IMO-1, 300 millilitres of FAA and 300 millilitres of OHN. Mix these ingredients well and leave it as a small heap on the bed for 5 days.

Step 3: On the seventh day, mix preparations of step 1 and step 2, and spread on the floor to the level of ground. Then spread 3 inched 45 kilograms of paddy straw onto the floor. After 10 days of leveling the floor, chicks can be incorporated for rearing. When paddy straws are no more be visible on the bed, which happens over 20 days, add more paddy straw to the bed.

Feed for the chicks : Broken wheat, green fodder, remains of vegetables, balance rice and fish waste etc. can be given to chicks as feed. For solving calcium deficiency of birds, it is advisable to give egg-vinegar solution, which can be prepared by sun dried crushed shells in vinegar solution for two days. One teaspoon of this solution can be diluted in 1 litre of water to be given to the chicks. It is also advisable to give it to the chicks the solution prepared by mixing the juices of garlic and ginger with jaggary, kept over 5 days, once in 20 days for disease control.

Time schedule for setting up of PFPF

	Procedures of making
Day 1	Make the Fish Amino Acids (**FAA**) with 500 gram of fish, 500 gram of Jaggary or Molasses and 10 gram of charcoal powder in a glass jar and tie the mouth of the jar with a plain paper and keep it for 15 days. FAA is ready on 16th day. On the 16th day 300 ml of FAA to be mixed with the ingredients mentioned in step 2
Day 7	Make Indigenous Micro Organism 1 (**IMO1**) with 500 gram of cooked organic rice. Keep it in a wooden box and tie the wooden box with a plain paper and bury under the soil (three fourth) in a shade and keep it for 3 days. That means IMO is ready on the 9th day. IMO 1 is needed for the preparation of IMO 3 which s needed for the Step 2. Imo 1 to be made again on the 12th day too for mixing it with the ingredients mentioned in Step 2
Day 8	On the 8th day, Lactic Acid Bacteria (LAB) to me made with 250 ml of rice rinsed water and 250 ml of fresh milk filled in a glass bottle for 3 days by covering the mouth of the bottle with a plan paper. On the 11th day collect only the plain liquid and add 10 parts of milk in a glass bottle tie the mouth with a plain paper and keep in the shade for 3 days. The yellow coloured liquid is LAB and on the 14th day 500 ml of LAB needs to mixed with the ingredients mentioned in Step 1
Day 10	Indigenous Micro Organism 2 (**IMO2**) to be made on the 10th day. 250 gram of IMO 1 and 250 gram of Jaggery/molasses to be mixed well and put in a glass container for 6 hours. IMO 2 is needed for making IMO 3 which is needed for the step 2.
Day 10	On the 10th day **IMO 3** to be made with 300 gram of IMO2, 300 gram of Charcoal Powder, 45 kilogram of rice bran and 21 litres of water. Mix these ingredients well and keep it on one side of the poultry shed. Leave it till 14th day and on the 15th day add 45 kilogram of IMO3 with the ingredients mentioned in step 2
Day 11	Fermented Fruit Juice (**FFJ**) to be made with 500 gram of yellow coloued fruit and 500 gram of Jaggery/Molasses. Mix these ingredients well and keep it in a glass container till 15th day. On the 16th day 300 milligram of FFJ to be added with the ingredients mentioned in Step 1
Day 11	On day 11, Oriental Herbal Nutrients (**OHN**) to be made with 500 gram of Ginger and 500 gram Jaggerry/Molasses and keep it in a glass container for 5 days after mixing it well. On day 16th day 300 gram of OHN needs to be added with the ingredients mentioned in Step 1
Day 12	Indigenous Micro Organism 1 (**IMO1**) to be made again on the 12th days with 500 gram of cooked rice and keep it in a wooden box and tie the wooden box with a plain paper and bury under the soil (three fourth) in a shade and keep it for 3 days. IMO 1then to be mixed with the ingredients mentioned in step 2

Day 10	**STEP 1**: A shed to be constructed with 30 feet width on the East West side, 15 feet width on the North South side and 10 feet height. Boundary wall to be constructed 10 feet in the North South side. The height of the boundary wall on the East West side should be 1.5 feet followed with a wire mesh in 8.5 feet height. Shed to be ready on the 10th Day and IMO 3 to be made on one side of the bed.
Day 14	**STEP 2** : On the 14th day, mix 4500 Kg Soil with 300 gram of Fermented Fruit Juice (FFJ) and 300 ml of Lactic Acid Bacteria (LAB) and keep it on one side of the bed
Day 16	**STEP 3**: On the 16th day, mix 300 gram of Fish Amino acids (FAA), 300 gram of IMO1, 45 kg of IMO3, 4.5 kg of charcoal, 90 kg of Paddy husk and 90 kg of Anthill soil and keeping it on the other side of the bed
Day 17	**STEP 4**: On the 17th day mix the ingredients of Steps 1 and 2 on to the bed and level the ground. Spread 45 kg of Paddy straw (3 inch cut)

Caritas INDIA
The Joy of Service...

Caritas India
CBCI Centre, Goldakkana, 1-Ashok Place, New Delhi - 110001
Web: www.caritasindia.org