



HOMEMADE CONCENTRATE FOR CHICKENS

Healthy, hearty birds
that can lay more eggs



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Jessenia Escobar Fuentes from the Capalchan community in El Salvador (Municipality of Tenancingo, Department of Cuscatlán), shares her knowledge on raising and feeding backyard chickens with homemade concentrate:

“The only chicken feed concentrate I knew about was the industrial kind that they sell at agrochemical stores.

Before I didn’t know anything about homemade concentrate or vaccination, but now I’ve acquired ten good hens and a rooster, and I’m learning how to improve my flock and be a promoter for my community...”

Purpose of raising chickens

Raising backyard chickens is an important part of the many promising practices that guarantee food security for farming families. Chickens provide products with a high nutritional value such as meat and eggs. They’re easy to handle and require little time and space.

Resources from the household can be used to build the chicken coops and provide feed using few inputs.

The family provides the labour for the handling, and the chickens make the yard a fun and lively place. The only limiting factor in raising chickens is poor nutrition, which causes birds to lay fewer eggs.

How to make homemade concentrate

Throughout the workshops, Jessenia Escobar Fuentes has started to realise the importance of each detail in chicken raising. Now she even feels confident enough to share her knowledge on chicken concentrate with her community. For her, a homemade concentrate needs energy, protein, vitamins, and minerals such as calcium.

Energy is needed to move, digest, grow and reproduce, and is provided by fats and carbohydrates. With lots of energy, chickens will always want to run around, fly, and be motivated to live. Maize, sorghum and rice provide this necessary energy, as well as roots and tubers such as cassava, yams, taro, papaya, bay cedar fruits, and musacea plants like bananas.

Proteins are also known as builders, because they help build muscle, meat, bones, and diverse inner organs, and are instrumental in the production of eggs. Free range chickens get protein from insects and earthworms, but in small quantities. That's why it's important to reinforce homemade concentrate with additional proteins from plants such as velvet beans, pigeon pea or soy.



It's important to mention that after the harvest these beans must be roasted in a skillet to remove a toxin that raw beans carry.

You just have to brown them. Don't let them burn or they'll lose their nutritional properties.

We can also find protein in some leaves, such as those of the Cordia Alba tree, the bay cedar, or leucaena (leadtree). Cut the branches and set them to dry in the shade. Mix the dried leaves with the other concentrate ingredients. You can also hang bunches of fresh leaves in the coop so that the birds will jump to peck on them.

Some people give their flock calabash seeds as a protein supplement.

Vitamins and minerals keep the birds healthy and are necessary for building bones, feathers, and producing eggs.

Vitamins can be found in grass, hay, and fruit peels.

Minerals such as calcium are good for building eggshells and strong skeletons, helping blood circulation and pumping the heart. When chickens eat insufficient calcium, egg production goes down, they stop laying as often, eggshells are soft and can even be deformed.

Calcium can be found in bone meal, table salt, ashes, ground limestone, seashells, and even eggshells themselves.

Vitamin powder is an important ingredient for concentrate. It's known as trace minerals. It contains phosphorus, salt and vitamins.

Required ingredients according to age

These concentrates contain corn, soy, molasses, *panela* (brown sugar loaf), table salt, and mineral salts or trace minerals.

Jessenia Escobar Fuentes, along with her brother-in-law Carlos Manuel De Paz Irabeta, have fortified the nutritional content by adding four ounces of mountain microorganisms. This improves the taste, and the birds eat it with relish.



Homemade concentrate for birds between 6 and 16 weeks of age

Ingredients	Quantity	Nutrition Facts	Cost in USD
Corn	9 pounds	6.5% Protein	\$1.35 USD
Soy	2 pounds and 2 ounces	8.5% Protein	\$1.03 USD
Molasses	1 cup or 10 ounces	239% Calcium	\$0.50 USD
Salt	1 ounce	82.4 mg Magnesium 5.7% Sodium	\$0.05 USD
Mineral salt or cobaltised trace minerals	Half a pound	RRich in Sodium 45%, Phosphorus 3.75%, Sulphur 9%, Cobalt 50 ppm, Zinc 7000ppm, Copper 2500 ppm, Iodine 100 ppm...	\$0.50 USD
Total	12.5 pounds	14.7 % Protein	\$3.43 USD

The portion per bird is four ounces a day. When four ounces of calcium carbonate are added, the product can be used to feed dairy goats. The portion per goat is eight pounds a day.

Concentrate for laying hens

Ingredients	Quantity	Nutrition Facts	Cost in USD
Corn	9 pound	6.5% Protein	\$ 1.35 USD
Pigeon pea or soy	3 pound	10.32 % Protein	\$ 1.50 USD
Salt	1 pound	82.4 mg Magnesium 5.7 % Sodium	\$ 0.50 USD
Molasses	10 ounces	239 % Calcium	\$ 0.50 USD
Calcium carbonate	1 pound	395 mg Calcium	\$ 1.50 USD
Mineral salt	Half a pound	Rich in Sodium 45%, Phosphorus 3.75%, Sulphur 9%, Cobalt 50 ppm, Zinc 7000ppm, Copper 2500 ppm, Iodine 100 ppm...	\$ 1.50 USD
Total	14 pounds and 3 ounces	16.82 % Protein	\$6.85 USD

The portion for laying hens is between three to four ounces a day.



Step by step: Making concentrate

1. Clean and weigh each ingredient.
2. Toast soybeans or velvet beans.
When using the leaves of leguminous crops, dry these in the shade for three days and grind them up together with the corn or sorghum.
3. Coarsely grind up each ingredient separately. Don't make it too fine.
4. Mix the corn with the soy or velvet beans first. Then add common salt and mineral salt. Continue with molasses or its substitute. Add ashes, and lastly, add the four ounces of mountain microorganisms.

Costs and difficulties

- ✓ Costs vary between \$3.43 USD and \$6.40 USD for an average of 13.4 pounds.

- ✓ Not all ingredients can be produced on the farm.
- ✓ Preparation takes about an hour.
- ✓ Building chicken coops, nests, and feeding and watering troughs requires investing in chicken wire, nails, zinc sheets, and a basic carpentry toolkit.
- ✓ Both free-range and farm chickens get stressed when in small spaces. That's why they attack and peck at each other and rip their feathers out.

Recommendations

- ✓ Grind ingredients up separately and mix them when making the concentrate. Don't prepare more than a week's supply of concentrate at a time because it can get fungus and ruin the batch.
- ✓ The birds should consume less than 60% of their feed in the form of concentrate.

- ✓ One pound of concentrate will feed four chickens a day.
- ✓ Serve the concentrate in feeding troughs.
- ✓ Make sure their water is clean, and change it every day to avoid an outbreak of disease. One litre of water is needed for every four chickens during the rainy season, and two litres during the dry season.
- ✓ One way to reduce costs is to know about nutritional substitutes and guarantee there will be food trees and velvet beans planted in fences, organic barriers, and in companion planting or crop rotation with other crops.
- ✓ Velvet beans should not be ground up while raw, as there is a risk they will intoxicate the birds. That's why when making concentrate it's recommended to toast them before grinding in order to remove the toxins.
- ✓ When leaves are the source of protein, cut the branches and set them to dry in the shade and not in the sun, because they will lose their nutritional value. The ratio is one pound of well-dried leaves for every four pounds of corn or sorghum.
- ✓ Store the concentrate somewhere dry, and don't let it get damp. Moisten it with water and add sugar or panela when serving.
- ✓ Build two to four worm farms. Dig ten centimetres depth in an area that is one and a half metres long by two metres wide. Toss in green and dry leaves, crop residue, organic kitchen waste, and cow manure. Moisten and cover with plastic and branches. Uncover for a day after four days for the chickens to scratch and peck, entertaining themselves looking for grubs.



Leaves of madrecaao



Gandul beans

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Credits

Production: Roberto Vallecillo • **Revision:** Lutgarda Barahona, Louise Joyce, Mark Camburn •
Translation: Juliana Marín, Mark Camburn • **Photography:** Roberto Vallecillo •
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www.sciaf.org.uk

Scottish Catholic International Aid Fund
19 Park Circus
Glasgow G3 6BE
T: 0141 354 5555
E: sciaf@sciaf.org.uk

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