



*Established For the Members, By the Members ..... Working Together, the Possibilities are Endless!*

## Feeding KuneKunes

(Battling Untruths)

By Deb Allen

If you are looking for "grass-fed pork," you will likely find that after much research, you come up empty-handed. That is because grass-fed pork does not exist. Pigs are omnivores, meaning they eat plants and animals; they need more than grass to survive. **Do they graze? YES! However, is that all they need? A resounding NO!**



## What Pigs Eat Naturally

The nutrients that pigs consume transfer directly to the meat they produce, including flavor, nutritional content, and more.

A pig is instinctually an opportunist and will eat almost anything, however, left to roam freely, they love to forage for a wide range of foods, including:

- Grass
- Nuts
- Roots
- Tubers (thick underground part of a stem)
- Invertebrates
- Eggs
- Frogs
- Small rodents
- Birds
- Carrion
- Garbage

## Pasture-Raised, Not Grass-Fed Pork

Since grass-fed pork does not technically exist, pastured or pasture-raised pork is what you are looking for. However, understanding this term can still present a challenge despite this clarification.

### No Formal Definition for Pasture-Raised Pork

Interestingly, there has yet to be an official definition for pastured or pasture-raised pork. As a result, it can mean different things to different farmers, so it is important to dig more deeply to understand how the animals are being raised.

Generally, hogs raised according to pastured philosophies are given shelter, additional nourishment, and continual access to their natural habitat. However, some producers may need to be more exact with the definition of their practices. For example, access to a "pasture" can range from one animal with continual access to open space to multiple animals confined tightly to a single area.

Please follow this link to a FACT sheet on why pasture-raised pork is nutritionally better than factory pork.

[The Nutritional Benefits of Pasture-Raised Pigs](#)

## **Kunekune Feeding Facts**

1. Kunekune pigs are omnivores, not ruminants or herbivores.
2. Growing pigs need more food and nutrition than adults.
3. Growing a pig's body condition in its first year should be full but never overweight.
4. Growing pigs absolutely need a complete feed with the necessary levels of vitamins, minerals, and amino acids.
5. The goal is not fat pigs. The goal is for pigs with a healthy growth rate.
6. Feed your pigs a variety; don't overdo fruits, grains, or dairy. Moderation is the keyword.
7. Eggs can be given a few eggs per week, per pig. Raw or boiled. Eggs are a treat.
8. Whey is wonderful in moderation, as is milk.
9. Bread should be fed in moderation, not as a main food source.
10. Avoid sweets. Avoid sweet feed as well!
11. There is no set magic amount that you should feed your pig. Pigs are all metabolically different. It would be best if you fed for body condition. Start with a set amount and watch your pig's condition. Too heavy? Reduce feed, and add fiber. Too thin? Increase feed.
12. Extras like acorns, fruit, bugs, grubs, or other pasture goodies that a pig might come across add nutritionally to their varied diet

Your core diet for your Kunekune pig should consist of a completely balanced feed, high-quality hay, pasture/produce/alfalfa pellets or cubes, fodder, etc.

## **Term Definitions**

### **Herbivores**

In simpler words, the animals that are anatomically and physiologically designed to eat plant materials like foliage, grass, or marine algae are taken as herbivores.

Even if herbivores have the option to eat meat, they can not do so because their mouth is adapted to rasping or grinding. Moreover, their digestive system can not digest meat

as well. Instead, it can only process grass, fruits, vegetables, bulbs, roots, tree bark, and other tough plant materials. Deer, horses, elephants, camels, donkeys, cattle, zebras, goats, and sheep are a few common examples of herbivores.

## **Omnivores**

Omnivores are animals that can process and digest a variety of food options like eggs, insects, plants, meat, fungi, etc. In other words, omnivores are animals that rely on animal protein and vegetation to live a balanced life.

Omnivores can hunt animals for food or choose to survive on plants. They usually have both sharp teeth and flat molars, which makes it possible for omnivores to eat plants and fellow animals. Examples of omnivores are birds, pigs, chimpanzees, dogs, bears, raccoons, insects, and humans.

## **Carnivores**

Carnivores are animals that mainly survive on other animals. They hunt and kill their fellow animals for food. Carnivores prefer hunting herbivores, omnivores can also be hunted down, but herbivores are preferred. Carnivores need a large number of calories, so they have to hunt bigger animals for survival. Lions, wolves, hyenas, leopards, polar bears, cheetahs, pinnipeds, etc., are common examples of carnivores.

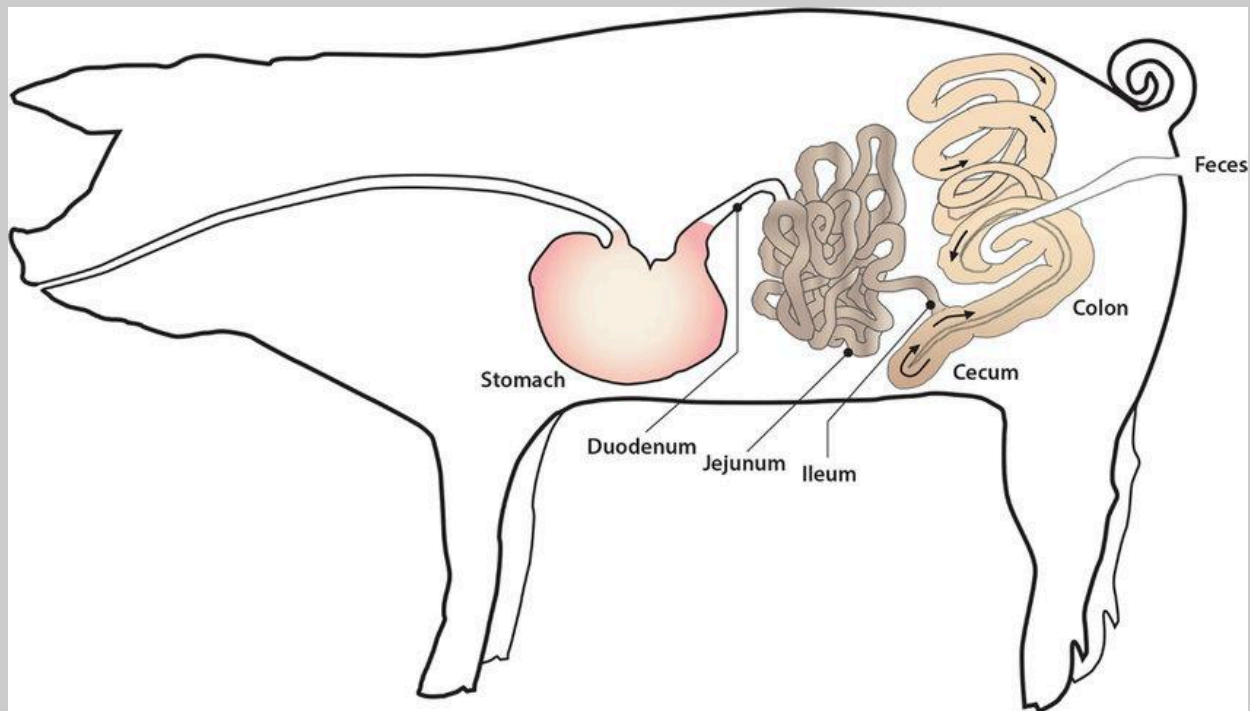
Another way to determine status is to look at dentition. Herbivore teeth usually have one row of grazing teeth to rip up vegetation, followed by a mouthful of grinding molars. Carnivores have sharp pointed teeth to catch, hold, and tear flesh. Omnivores have sharp front teeth to tear flesh and molars to grind, like humans and pigs.

Now that the terms "herbivores," "omnivores," and "carnivorous" have been explained, it is quite obvious why pigs are categorized as omnivores.

They are categorized as omnivores because they can eat and digest just about anything. Wild pigs are the main reason why a misunderstanding arose and still exists. Wild pigs mostly get to eat plant matter and seeing them eating plant matter most of the time tricks us into thinking that pigs are herbivores. Even the wild pigs that do not have many options are opportunistic omnivores.

They eat eggs, worms, insects, small mammals, birds, and some reptiles whenever they get a chance to eat. However, as wild pigs are hardly spotted eating meat, confusion arises that pigs are "really" omnivores. Even if domestic pigs keep eating plants and food scraps all their life, they would still be natural omnivores.

## Digestive tract



(source: [Diagram of the swine gastrointestinal tract with major sections...](#))

The wild pig's digestive tract is identical to its domestic counterpart. The stomach is a simple, non-ruminating structure. It is technically two-chambered with a small blind pouch or diverticulum, having a total capacity in adults of approximately 5 to 8 liters (Briedermann, 1986). Typically, these animals can daily eat between 3 and 5 % of their total body mass (Bodenchuk, 2008). The colon is spirally coiled with a cecum at the end of the large intestine. The wild pig's digestive tract can adequately digest and utilize plant, algal, fungal, and animal matter.

**However, it has a poor capacity for breaking down cellulose and hemicellulose, structural carbohydrates that form the nutritional basis for ruminants** (e.g., cows, deer, etc.). **Pigs cannot effectively digest these structural carbohydrates relative to ruminants** because: (1) they do not possess the bacteria/protozoan-filled 4-chambered stomach system of the ruminant that digests forage through fermentation, and (2) their digestive strategy is to maximize forage intake and gut transit time. Rather, wild pigs possess a stomach that relies on gastric secretions and enzymes for digestion, and the point where fermentation can take place (i.e., cecum and colon) is located behind the primary structure responsible for nutrient absorption (i.e., small intestine).

Additionally, fermentation is a relatively slow digestive process, and the rapid passage rate of digestion needs to allow for efficient fermentation. As a result, wild pigs tend to



select forages that are easily digestible and low in structural carbohydrates. Additionally, **what fermentation takes place in the cecum does not become effective until pigs are at least four months old and often longer in slow-growth heritage pigs. This means young pigs require more nutrition than forage.**

## Nutritional Requirements

Swine requires six general classes of nutrients: water, carbohydrates, fats, protein (amino acids), minerals, and vitamins. Although not a specific nutrient, energy is an important nutritional component primarily derived from the oxidation of carbohydrates and fats.

**I will only discuss a few items as they are the basis for the controversy over why people think they can survive on pasture alone, and not be given pig feed.**

### Amino Acids

Amino acids, normally supplied by dietary protein, are required for maintenance, muscle growth, development of fetuses and supporting tissues in gestating sows, and milk production in lactating sows. Of the 22 amino acids, 12 are synthesized by the animal; the other 10 must be provided in the diet for normal growth. The 10 dietary essential amino acids for swine are arginine, histidine, isoleucine, leucine, lysine, methionine, phenylalanine, threonine, tryptophan, and valine. Cystine and tyrosine can meet a portion of the requirement for methionine and phenylalanine, respectively, because the pig can convert them. **The lowest level of amino acid in pig feed compared to how much a pig needs is called the 'first-limiting' amino acid. Make sure you have enough of the limiting amino acid to get good pig growth (for us, this means lysine).**

The percentages of crude protein listed in numerous research papers provide the required levels of lysine (the first limiting amino acid) and sufficient amounts of the other essential amino acids in diets consisting of corn and soybean meal. The dietary lysine requirement during the early starter phase is quite high (1.70%) but decreases to 1.53% and 1.40% during the middle and final starter phases, respectively. The requirement continues to decrease throughout the growing-finishing stage from 1.12% during the early growing phase to 0.71% during late finishing.

The amino acids of greatest practical importance in diet formulation (ie, those most likely to be at deficient levels) are lysine, tryptophan, threonine, and methionine. Corn, the basic grain in most swine diets, is markedly deficient in lysine and tryptophan. The

other principal grains for pigs (grain sorghum, barley, and wheat) are low in lysine and threonine. The first limiting amino acid in soybean meal is methionine, but sufficient amounts are provided when soybean meal is combined with cereal grains into a complete diet that meets the lysine requirement. **Lysine is generally the first limiting amino acid in almost all practical diets, so if diets are formulated on a lysine basis, the other amino acid requirements should be met.**

## **Calcium and Phosphorus:**

Although used primarily in skeletal growth, calcium, and phosphorus play important metabolic roles in the body and are essential for all stages of growth, gestation, and lactation. The NRC estimates requirements of 0.66% calcium and 0.56% total phosphorus for growing pigs of 25–50 kg body wt. The requirements are higher for younger pigs and lower for finishing pigs, but the ratios of calcium: and phosphorus are approximately the same for all weight groups. These levels are adequate for maximal growth (rate and efficiency of gain), but they do not allow for maximal bone mineralization.

The ratio of total calcium: to total phosphorus should be kept between 1.25:1 and 1:1 for maximal utilization of both minerals. Wide calcium: phosphorus ratio reduces phosphorus absorption, especially if the diet is marginal in phosphorus. The ratio is less critical if the diet contains excess phosphorus.

Most of the phosphorus in cereal grains and oilseed meals is in the form of phytic acid (organically bound phosphorus) and is poorly available to pigs. In contrast, the phosphorus in protein sources of animal origin, such as meat meal, meat and bone meal, and fish meal, is in inorganic form and is highly available to pigs. Nevertheless, it is illegal in most places to feed animal byproducts to pigs due to disease transmission concerns.

Even in cereal grains, the availability of phosphorus varies. For example, the phosphorus in corn is only 10%–20% available, whereas the phosphorus in wheat is 50% available.

**The proper ratio of Ca/Ph is important in the kunekune to prevent issues in the kidney and bladder due to the formation of stones from imbalances. Too much milk given can also cause problems. All stock feed or sweet feed, which are NOT meant for pigs, are commonly way off in the Ca/Ph ratio for pigs. In fact, I have seen some as high as 3:1. Many animals suffer from kidney/bladder stone formation when there is an imbalance. Mostly intact male or castrated male**

animals, but it is common enough in almost all livestock species to be aware that it exists.

## Iron

Iron is involved in many enzyme systems. It is necessary for the formation of Hgb and, therefore, for the prevention of nutritional anemia. **Because the amount of iron in milk is very low, suckling pigs should receive supplemental iron,** preferably by IM injection of 100–200 mg in the form of iron dextran, iron dextrin during the first 3 days of life. Giving oral or injectable iron and copper to sows will not increase piglet stores at birth nor increase the iron in colostrum and milk sufficiently to prevent anemia in neonatal pigs.

We now know there is no such thing as grass-fed pork. The term 'grazing pig' needs to be more understood. We know pigs are omnivores and require feed and access to pasture, forage, or hay. Now what? Let us talk about feed basics.

## Feed Basics





Many different appropriate feeds can be fed as long as they are composed by a knowledgeable swine nutritionist with attention to high enough **lysine (minimum 1%)** and **selenium (about 0.2-0.3mg/kg)** content as well as **low sodium** (salt) content.

Start with a feed with a protein level of around 16%. This is a good base number. You can use a lower % if you add alfalfa pellets to the diet, as alfalfa is high in protein, though again the lysine level must stay around or above 1%.

## **Soaking**

If you buy pig feed in pellet form, you may choose to soak them for a couple of hours before feeding or not. Many people think it improves digestibility. In addition, it can help increase water intake, especially in winter. There are also ground feeds available, which look like coarse sand. This feed can also be soaked. Feeding younger piglets or senior pigs with few effective teeth is especially helpful, as it does not require as much chewing as pelleted feed.

## **Mold Warning**

Avoid moldy feed! Pigs have a very low tolerance for mold, and mycotoxins are deadly. This is another reason to avoid all stock and sweet feeds, as they are often made from 'leftovers' from other feed production and are often high in mycotoxins.

**Underfeeding will diminish growth rates, and overfeeding can lead to mobility, fertility, and quality of life issues.**

## Fruits and vegetables



In addition to their regular pellets, you can offer garden scraps, fruit, and vegetables. Pumpkins and melons of all sorts are favorites! Treats should make up only a small portion of the diet, as they often contain more sugars and can lead to weight issues.

Make sure anything you feed is not moldy or a toxic or poisonous plant, like rhubarb. Tomato, potato, eggplant, pepper plants, and other nightshades are also toxic. Nightshades have alkaloids that impact nerve, muscle, joint, and digestive functions in animals and humans. Never feed any food that has come into contact with or been prepared in the vicinity of meat or meat byproducts. Feeding meat, meat byproducts, or

food that has been cross-contaminated with meat is not permitted in many places due to concerns of disease transmission. And NO ADDED SALT! Salt toxicity kills many pigs yearly. Therefore, they must always have limited salt and access to fresh water.

The Empire Kunekune Pig Association (EKPA) also has an excellent resource for pasture-raised kunekunes and nutrition. Please follow this link for more information:

[Kunekune Nutrition 101 Feed Management for Optimal Health May 23, 2020 at 10:30 am](#)

## Extras

1. **BOSS** - Black oil sunflower seeds. They are often given in small quantities of 1/2 cup daily to improve coat and skin condition.
2. **Calf Manna** - A vitamin, protein, lysine supplement. Fed to package directions, this can be helpful. Whether it is piglets having trouble transitioning to feed, pigs stressed due to transportation, showing, or feed changes, or a sow not reaching her milk production potential.
3. **Spent grain or Brewer's grain** - Brewer's grain is not commonly used for pigs, although small quantities can be fed with good results to sows and to pigs after reaching about 35 kg (75 lbs). As pigs do not digest the fiber well, the primary use is for its protein content.
4. **Beet pulp** - added fiber. It does contain some sugars, so use sparingly to reduce packing on lard.
5. **Whey** - a good protein source. Used in moderation, can be beneficial.

## Feeding Schedule

Feeding schedules vary from farm to farm and even pen to pen or pasture to pasture. Again, it is up to the farmer to gauge body condition and adjust feed appropriately. Feeding pellets can be done only once a day if pastures are lush. Smaller pens with less pasture require feedings twice daily. Common sense should tell you that younger pigs and lactating sows have higher feed requirements and need twice a day feedings or more.

**Here is an idea of how to start:**

**Newly weaned pigs.** Start with a pound twice daily. About 2 cups twice daily. I prefer weighing feed over volume feeding.

**Meat pigs** (wean to butcher 12-15 months) 2-3 lbs a day divided in two feedings. Kunekunes are lard pigs. Excess feed and over conditioning lead to more lard and lessened quality of meat.

**Adult pigs** (over 12 months). 2 lbs a day in 1-2 feedings depending on pasture or hay. Pregnant sows may need to be watched for condition but often do not require much extra feed. The risk is that the piglets grow too much and may cause farrowing issues.

**Lactating sows and piglets.** Normal feed 2 lbs plus 0.5 to 1 lb per piglet in 2-4 feedings. We usually only increase feed for a few days depending on the sow's condition. Increase feed slowly as the sow may eat too fast and vomit. Example: sow plus 6 piglets. 2 lbs plus (6x1 lb= 6 lbs). 8 pounds total. We have fed sows up to 12 pounds daily because of body condition.

As piglets start eating out of the sow's feed dish, you can add pellets or soaked feed as much as they can. We use a creep feeder to prevent the sow from eating the piglet's ration and her own. As bacteria can grow, do not allow wet feed to remain in the pan for long in hot weather. Use a clean pan for every feeding.

## Thoughts

You should not buy a small quantity of this and a bit of that and some of this and a neighbor gave me extra whatever....and mix it all up and feed it. Say a prayer and hope it does not kill them. The problem with this method...is that it often costs more than if you just fed the best feed mill pig feed you can find. Plus pasture, forage, and hay. Why go to all the work of buying 6 different things, then measuring, crushing, mixing, and storing all these extra things? Furthermore, you still do not know if it is nutritionally complete or balanced.

Hey, I get it. The economy could be better right now. Fertilizer, feed, and most everything on the farm costs more. Some people think they can cut corners in feed to save money, like feeding all stock or sweet feed. Alternatively, just saying "they are grazing pigs, they do not need feed at all."

I use the analogy: "you can feed your kids oatmeal three meals a day and they will survive but they will not thrive". If you are an ethical farmer, you will understand what goes in is what comes out. You cannot scrimp on the health and well-being of your

animals, whether they are breeding animals or destined for your table, you must feed them optimally to produce the desired results.

Feed conversion depends on many things besides the feed itself; Temperature, weather, stress, genetics, sickness, environment, social structure, stocking density, activity levels, deworming, vaccinations, and more play a part in your feeding protocol.

Compare feeds by bag tags. Bag tags list the % ingredients (protein, fat, fiber, lysine, calcium, phosphorus, salt, selenium etc.). Ask the advice of an animal nutritionist if available. Talk to your vet. Moreover, please take advantage of the many kunekune breeders who have been successfully raising these amazing pigs for years. Finally, find a mentor whose goals align with yours and ask questions.