

# Cricket – Info pack

Common Name: House Cricket

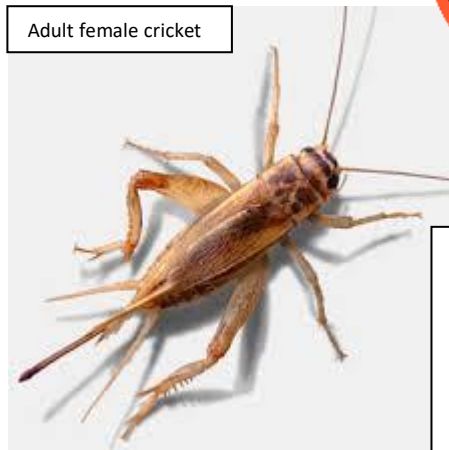
Scientific Name: *Acheta domesticus*

Size: <30mm

## Nutritional details

Moisture	73%
Crude Protein	18%
Fats	5%
Ash	14.6%
Fibre	2.4%
Calcium	0.2% or 2g/kg
Phosphorus	0.95% or 9.5g/kg
Calcium:Phosphorus	0.33:1

Figures are 'as fed' averages.



Adult female cricket



Bugs Alive is a Cairns based innovative insect production company supplying live insects.

Our insects are fed fresh fruit and vegetables and a grain-based diet with supplements to ensure your pets receive the best nutrition possible. Keep an eye out for our novel species.

## Facts about our live crickets:

- Responsibly raised on a fruit, vegetable and grain diet in Cairns by Bugs Alive
- Once ordered, crickets are packed and delivered/picked up on the same day.
- Grown and packed by locals.
- Only commercial insect breeding operation north of Brisbane.

Crickets (*Acheta domesticus*) are insects with distant relations to grasshoppers, and are found almost all over the world. They are an excellent source of protein and are easily "gut-loaded" with calcium and other important vitamins to meet nutritional requirements of specific pet species.

## Cricket care

- Crickets are a staple diet of many animals. 'Gut loading' (covering the insects in vitamins & minerals) is a way to boost nutrient intake for your pets.
- Crickets prefer temperatures of 21-34°C & 40-90% relative humidity. They can survive outside these ranges for short periods. Higher temperatures will shorten their lifespan.
- Holding containers require fresh air and ample space to move around and dark hiding spaces. Egg cartons provide great homes. They should be cleaned out regularly or between cricket batches to prevent disease.
- Feed fresh dry vegetables for food & moisture, such as carrots, pumpkin etc. 'Wet' foods decompose too quickly & can cause disease & pest species. Chicken feed is a good option but they also require water sources. Drinkers must be shallow or have sponges, otherwise crickets can drown.
- If you need to move crickets, use paper towel tubes or egg cartons by leaving them in the enclosure. Allow time for the crickets to move in before removing and shaking the crickets into your animal's habitat or wherever you need them.

## Interesting facts

Crickets are omnivorous, meaning they will eat both plants and meat, and if deprived of food will eat smaller or dead crickets.

Female crickets have 3 spikes at their rear, while males have only 2. Female's centre spike is for egg laying (ovipositor).

House crickets have three life cycle stages: egg, nymph, and adult. Adults live for 6-8 weeks and their entire life cycle lasts 2-3 months depending on temperature. They thrive at 26-32°C. As they grow, nymphs (baby crickets) must molt 8-10 times before becoming an adult. The new exoskeleton is milky white and soft until it hardens in a few hours. A nymph will begin growing its wings after about a month.

Chirping is only done by male crickets. Males chirp to scare away other males, to attract and impress females for mating, and to celebrate successfully mating with a female. A chirp is not created with a cricket's mouth. The sound is created with the insect's wings using a process called stridulation. The bottom of each wing has a vein with comb-like serrations. A cricket will open his wings and then rub one wing along the serrations of the other wing. This rubbing creates the chirping and opening the wings helps project the sound.

The amount a cricket chirps depends upon different factors like species, age, and temperature. Temperature plays a role in the amount of chirps because crickets are cold-blooded and share the temperature of their environment. The warmer it is the faster crickets can rub their wings and chirp. The colder it gets the slower they chirp.

**Dolbear's Law** - Amos Dolbear was a physicist who discovered a correlation between a snowy tree cricket's chirps and the temperature. In 1897, he published an article with a formula to determine the temperature based upon the number of chirps a cricket makes in a set amount of time. This formula became known as Dolbear's Law.

The formula is:  $\text{Temperature } ^\circ\text{C} = 10 + (\text{chirps per minute} - 40)/7$

A simplified version only requires counting chirps for 8 seconds:  $\text{Temperature } ^\circ\text{C} = 5 + \text{chirps per 8 seconds}$ .

The simplified formula is not exact. Chirps from species other than the snowy tree cricket may not be as accurate due to factors like mating and age.

## Further Nutritional information

**Protein** is essential for building and maintaining muscles, as well as assisting proper organ function and providing energy. High protein insects are great for helping sick or injured reptiles recover, as protein is used for cell maintenance and repair.

It is advised that strict insectivores (reptiles that only eat bugs, no veggies) must be fed a variety of insects to make sure they get the nutrients they need, as some feeders are higher in nutrients than others.

**Fats** in insects are generally unsaturated, which is better than saturated fats. A high fat diet is still unhealthy for reptiles. The fats may be "healthy" by our considerations, but fat as a nutrient is very high in energy: 9 (kilo)calories/g of fat, vs 4 (kilo)calories/g of protein or carbohydrate.

Excess energy gets converted to fat, which can contribute to obesity in pet reptiles. Fats are essential for a variety of functions:

- Assists absorption of certain vitamins (vitamins A, D, E, K)
- Cushions internal organs
- Helps create fat stores for brumation and egg laying
- Helps maintain body temperature

**Fibre** in insects comes mostly from chitin, or the insect's exoskeleton. It is a complex carbohydrate (good). The amount of fiber in an insect is typically very low; high amounts can lead to digestive issues if fed too often or in excess.

The hardness of an insect's exoskeleton does not indicate higher fiber levels (or chitin content). Instead, it's due to certain protein chains used to reinforce the exoskeleton.

**Ash** are the parts of the bug that aren't protein, fat, or fibre. This is typically salts, minerals, and metals, including the insect's gut contents. Higher levels of ash, can be assumed to correlate with higher levels of vitamins/minerals as well as a larger gut capacity.

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## Ca:P — The Calcium to Phosphorus Ratio

Knowing how to balance your reptile's dietary calcium and phosphorus intake is critical to managing its health.

Reptiles require twice as much dietary calcium as they do phosphorus. In order to properly digest phosphorus, calcium must be present. The optimal ratio of calcium to phosphorus is ~2:1. When there isn't enough calcium for the reptile's body to properly process phosphorus, it will steal calcium from bones and other stores. Over time, this repeated robbery of calcium can lead to Metabolic Bone Disease (MBD).

Most insects contain more phosphorus than calcium, except for Black Soldier Fly larvae. Calcium supplements are designed to correct the natural imbalance between calcium and phosphorus. When choosing a calcium powder, make sure that it does not contain phosphorus or more than 5000 IU/kg of vitamin D3.

### Converting from As Fed to Dry

**Matter:** Divide percentage of nutrient As Fed by the percentage Dry Matter, and then you get the percentage of nutrient by dry weight.

**Converting from Dry Matter to As Fed:** Multiply the percentage of Dry Matter by percentage of nutrient.

Why should you care? Knowing these percentages gives you the knowledge to make educated decisions about which feeders to give your reptiles, and how often, based on individual needs.

*Disclaimer: this information has been provided in good faith based on industry average published data. Published data also varies. Therefore, individual samples may vary and no responsibility accepted for variances.*

