TOPINSECT

CRICKETS

Crickets have a high nutritional value (See table) and have furthermore, due to their hard armour, the quality to clean young birds' intestines by dragging along the surplus of mucus in the intestines during the intestinal transit. This is especially of importance to purely insect-eating birds.

Topinsect generally uses house crickets, banded crickets and field crickets. Our farms breed crickets on a mixture of grains without any added growth promoters or chemicals.
Due to the boiling and shock freezing process on our equipment, the crickets are disposed of all bacteria and become virtually sterile. The remaining fraction of bacteria and fungus is well below the standards which apply to human and animal food. This is frequently verified through analysis. The double process makes the crickets also better digestible for animals.

Crickets are a part of the *Gryllidae* species of the *Orthoptera* order (grasshoppers and crickets). The females have a long ovipositor which they use to lay eggs in the ground or in cracks. The famous chirp is produced by males when rubbing their wings.

Crickets are especially found in warmer countries (about 1.100 species). In Holland, several indigenous species like the wood cricket (*Nemobius sylvestris*) and the black field cricket (*Gryllus campestris*) can be found. The first species are found on the ground under trees or bushes, and particularly in places with a thick layer of humus. The black field cricket is (a lot harder) to be found in little holes in meadows. In Holland and Belgium, the total number of these crickets has heavily diminished, which is why they now appear as "rare" on the Red List of endangered species. Wood crickets can still be easily found in a lot of forests in East Holland.

The life-stages of this insect differ from most other insects.
Cricket – egg - embryonic and nymphalid development

The development of the fertilized egg implies a couple of phases. *Orthoptera* are insects with an incomplete transformation. The young insects highly resemble to the full-grown insects and are usually called "nymphs". From the egg hatches a 'cricket' which is packed in a thin covering (embryonic membrane) and is called vermiform (wormlike). This covering soon bursts open after which the nymph of the first phase appears. The larva has a comparatively large head and no wings. Besides these differences, this animal highly resembles to its parents. During each sloughing, the wings grow a bit and the genitals develop (the latter are only functional once the insect is full-grown). The number of nymphal phases differs depending on the species. West European field grasshoppers generally have 4 phases while crickets have about 10. The insect will be full-grown after the last sloughing. This animal will hold itself on to a blade of grass or twig using his legs, often with his head downwards. The insect which crawls out of his skin is colourless and soft. By pressing blood in their soft, wrinkled wings, they can stretch them and get them to dry. The drying process takes a couple of hours while the complete colouring and hardening process could take a few days.

Feeding Directions

Topinsect insects should always be defrosted before being offered to animals. An insect which is still frozen could cause stomach or intestinal cramps.
Never offer an animal more defrosted insects than it can eat. If too many insects are offered, they'll not be eaten and their quality will decrease rapidly.

How defrosting Topinsect insects?

- Spread the insects out in a thin layer in a warm room for about a quarter of an hour.
- If you wish to accelerate the defrosting process, you should put the insects in a kitchen sieve with fine mesh and wash them with cold or tepid water.

How offering defrosted Topinsect insects?

To birds, reptiles and amphibians:

- Always use clean dishes or jars
- Do not place the insects in direct sunlight or under a lamp in a terrarium and cover the dishes to put them in the shadow. Due to the high temperature and high protein percentage, the feed will dry out and the decomposition (rot) accelerates. A steak in the sun will neither be long edible.
- It is recommended to offer smaller parts several times per day in case of warm weather.

To fishes:

- The Topinsect insects can be thrown in the aquarium or pond once they are defrosted.
- *The following rule also applies here: never offer more insects than necessary because insects which are not* eaten immediately will sink to the bottom and rot.

Analyses

	In Fresh	In Dry Matter
Fluid	69,1 %	0%
Dry Material	30,9%	0%
Raw ashes	1,8%	5,8%
Protein	18 %	58,3 %
Fat	8,2 %	26,5%
Carbohydrates	2,9%	4,4 %
Starch	0 %	0%

Packaging

1 litre package

1 litre of Crickets is approximately 200 gm.

Store at -18°C

Distributed by:

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