

Why insects?



by Paul Vantomme

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[http://www.youtube.com/watch?
v=zehGaFUPVMA](http://www.youtube.com/watch?v=zehGaFUPVMA)

Context to feed in 2014:

- 7 billion people
- 20 billion chickens/ 1,4 b cattle/ 1 b sheep....
- 75 million tons of fish (aquaculture).....

- 38% of world land use is for AGRICULTURE
- 70% of total agriculture land use is for feeding livestock
- 70% of total fresh water use is for agriculture

- 42 kg of MEAT/ 19 Kg of FISH (average capita food availability)

Three reasons for insects as feed and food:

- ✓ Good for your nutrition
- ✓ Good for the environment
- ✓ Good for local business opportunities



Nutrition:

- ✓ Protein content comparable to meat and fish
- ✓ High in good fatty acids
- ✓ Rich in micronutrients

Environment:

- ✓ Require less water
- ✓ Emit fewer greenhouse gasses
- ✓ Efficient feed conversion rates

Business:

- ✓ Rapidly growing industry
- ✓ Entrepreneurship
- ✓ local Socio-economic benefits



Three reasons why insects are not already on our plates in Europe:

- ✓ No regulatory frameworks explicitly govern insects as food and feed
- ✓ Limited supply
- ✓ Disgust factor



- ✓ Not explicitly stated within food and feed regulations: not allowed & not forbidden
- ✓ Few producers for feed and food due to regulatory barriers
- ✓ Not a part of European food culture



Three of the most urgent actions that need to be taken:

- ✓ Public **awareness** raising, networking and information sharing
- ✓ Knowledge, **research** & pilot development
- ✓ Include insects into food and feed **legislation**



species of insects have been identified as human food

31% beetles (coleoptera)

14% bees, wasps and ants (hymenoptera)

3% termites (isoptera)
2% flies (diptera)

13% grasshoppers, locusts and crickets (orthoptera)

10% cicadas, leafhoppers, planthoppers, scale insects and true bugs (hemiptera)

3% dragonflies (odonata)

5% other orders

CHOCOLATE-COLORED BEETLES ARE VERY POPULAR DELICACY IN NIGERIA

During the rainy season, people in the Central African Republic eat an average of 42 caterpillars a day.

TERMINUS IS PREFERRED WITH WAXEY FORMS IN SOUTH AFRICA

Because insects are cold-blooded, more of their food is less to keep their blood warm.

THE IRONWORMS ARE USED AS A MUCH-APPROVED DELICACY IN INDONESIA

AT WHAT STAGE ARE THEY EATEN?

	LARVA	PUPA	ADULT
orthoptera	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
isoptera	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
hemiptera	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
hymenoptera	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
lepidoptera	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
coleoptera	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

IN GHANA, WINGED TERMITES ARE EATEN ON WAXEY BEAD

Beef has 280-360g of protein per kg, but has less iron and fewer vitamins and minerals than caterpillars.

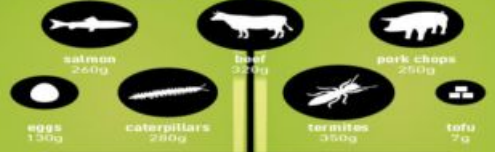
IN MEXICO, SPICY GRASSHOPPERS ARE EATEN IN TOSTS

Insects can be fed on organic side-streams such as human and animal waste and abattoir blood.

IN LAOS, BEE-CHANG IS A COMMON NUISANCE AND ONE OF THE FAVORITE FOOD INGREDIENTS IN LAOIS

ARE THEY GOOD FOR YOU?

How much protein do you get in 1kg?



ARE THEY GOOD FOR THE ENVIRONMENT?

How much animal weight do you achieve with 1kg of food?



How much CO₂ is produced for every 1kg increase in weight?



OTHER BENEFITS

Bees deliver about 1.2m tonnes of commercial honey every year.

Silkworms produce 115,000 tonnes of silk in China and 20,410 tonnes in India every year.

IF WE ALL SWITCHED TO EATING INSECTS, THE WORLD WOULD BE A VERY DIFFERENT PLACE



of the world's land surface could be reclaimed from the livestock industry



of our global greenhouse gas emissions could be eliminated



could be cut from average food prices in most countries



Conference
“Insects to feed the world”, 14-17 May 2014
Netherlands



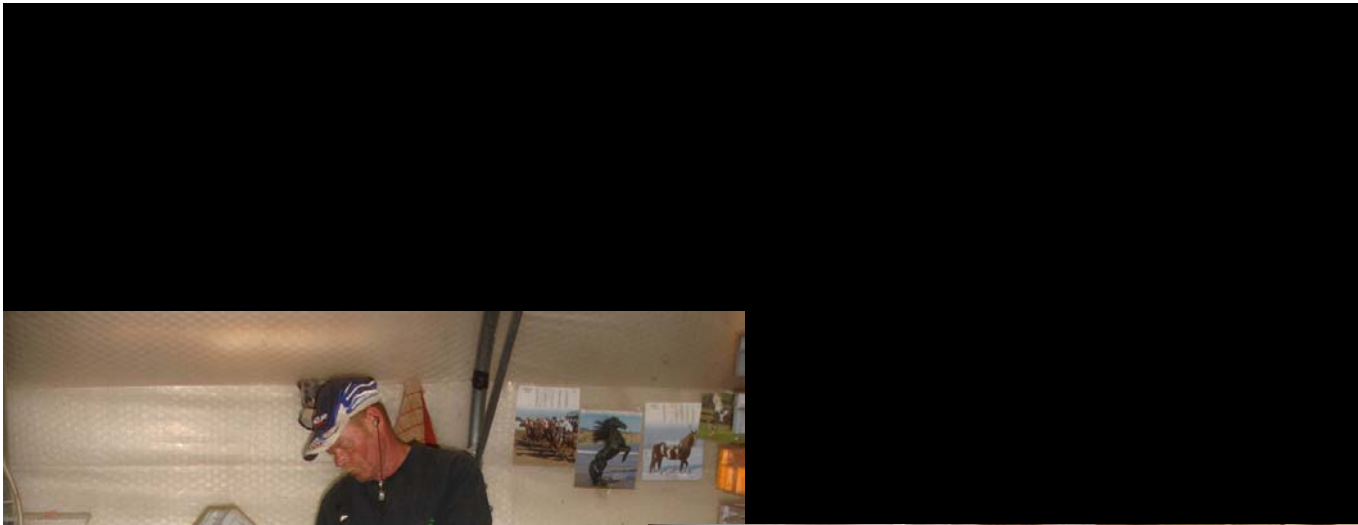
Organized by the Food
and Agriculture
Organization of the
United Nations (FAO) and
Wageningen University
and Research Centre

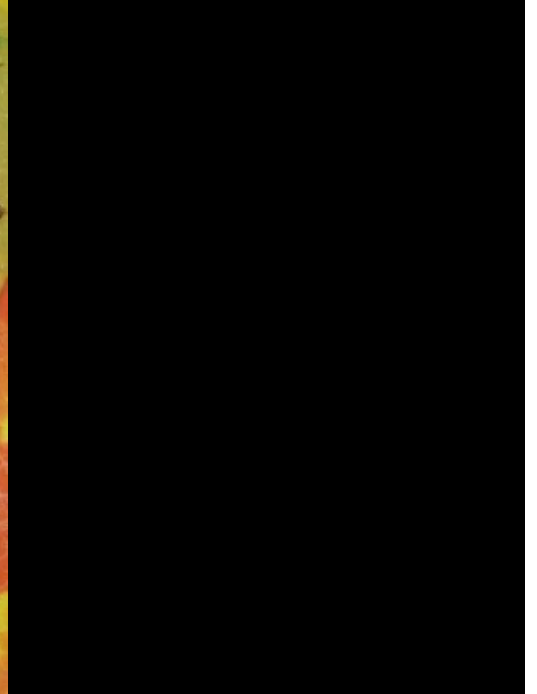
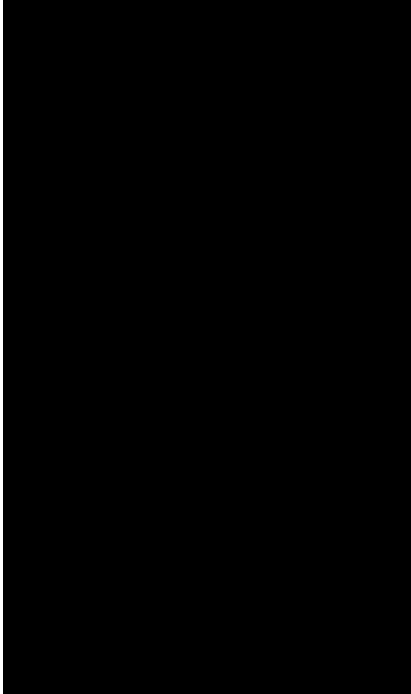


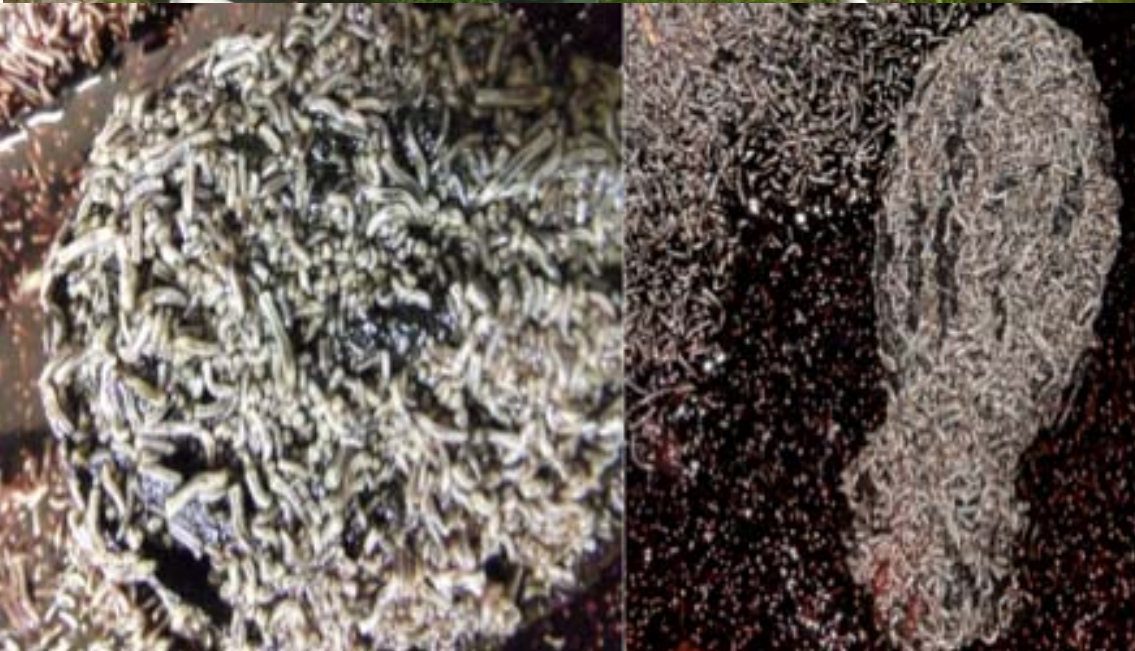
<http://www.fao.org/forestry/edibleinsects/en/>

Publications, Media, Videos, Global stakeholder directory, Projects, Legal study, SaveUp, contacts.









THANK YOU

