

'S HERTOGENBOSCH JOURNAL

Insects as Food? Trying to Change 'Ick' to 'Yum'

By JOHN TAGLIABUE

'S HERTOGENBOSCH, the Netherlands — Johan Van Dongen sells insects.

A bright, engaging man, Mr. Van Dongen is head of the meat department at Sligro, a kind of Costco on the edge of this trim Dutch town. Besides steaks, poultry and others kinds of meat, he offers mealworms, buffalo worms, locusts and other insects, as well as prepared products containing insects like Bugs Sticks and Bugs Nuggets — not for pets, but as a source of protein for people.

On a recent afternoon he arranged two sample stands, one with chunks of chocolate laced with ground mealworms (larvae for a type of beetle), another with various kinds of whole insects for munching, including worms and crickets, in small plastic containers.

At a nearby stand with a Dutch name that translated roughly as the Tasting Garden, there were more insects than garden. While shoppers gazed with puzzled looks, Mr. Van Dongen, 41, warmed up portions of an Asian vegetable dish with crickets mixed in.

Silvia van der Donk tasted some, raised her eyebrows and smiled approvingly.

Her daughter Melanie, 21, recoiled. "I ate locusts once," she said. "I didn't like the texture."

The efforts of Mr. Van Dongen and Sligro, a chain of 25 membership-only warehouse stores throughout the Netherlands, are part of a drive to convince the Dutch that crickets, worms and caterpillars are healthier sources of protein, and are less taxing on the environment, than steaks and pork chops.

Dutch breeders of insects, who until now have supplied the market for pet food — insects for geckos and other lizards, salamanders, newts, frogs, birds or fish — have jumped at an opportunity to open a new market and have founded a trade organization to promote the idea. The government is backing them, and last year it appropriated \$1.4 million for research into insects as food, to prepare legislation governing insect farms, health and safety standards, and marketing through retail outlets.

"The risky part is: How can we move this product upscale?" said Marian Peters, a public relations expert who is the organization's general secretary, munching on Mr. Van Dongen's insect-laced chocolate.

To be sure, the idea is not new. Entomologists in the United States have promoted the idea for decades and produced a newsletter and even cookbooks with titles like "Creepy Crawly Cuisine."

The Dutch take the food business seriously. One of the world's largest food companies, Unilever, has roots here, and the Netherlands, though a small country, is a major exporter of food products, including vegetables, meat and fish.

Moreover, it has the backing of the United Nations Food and Agriculture Organization, which warns that the production of meat like beef and pork as sources of protein taxes the environment, estimating that almost one-fifth of all greenhouse gas



PHOTOGRAPHS BY DIRK-JAN VISSER FOR THE NEW YORK TIMES

Customers at a Sligro store in 's Hertogenbosch taste insect dishes made by Johan Van Dongen.



Hungry? Mealworms and locusts are sold for human consumption at Sligro, a Dutch membership-only warehouse chain.

emissions comes from livestock.

Ms. Peters stresses that insects are already a major source of protein elsewhere in the world. Caterpillars and locusts are popular in Africa, wasps are a delicacy in Japan, crickets are eaten in Thailand. Yet in Europe, as in the United States, most people, except some very young children, consider them, well, pretty disgusting.

"I have a friend who came to look with her 2-year-old daughter," said Marieke Calis, 29, who with her parents and sister Margje, 31, raises about 14 different kinds of insects, including mealworms, buffalo worms (larvae for another kind of beetle)



Sligro in 's Hertogenbosch is part of a national drive.

and crickets on a four-acre farm an hour from here.

Dipping a hand into a tray of her buffalo worms feels like immersing it in a bowl of warm pasta, except that the pasta squirms. "The daughter plunged her hands into a tray of worms, and was delighted," Ms. Calis said. "The mother was horrified."

When Manon Houkes, 18, strolled by Mr. Van Dongen's tasting garden at Sligro recently with her grandparents, Hans and Jenny Klop, Ms. Houkes would not taste the Bugs Nuggets, a concoction of 80 percent ground chicken and 20 percent ground mealworms, that Mr. Van Dongen was preparing. "No, it's yuck," she said, curling her lip.

Her grandmother tasted, and approved. "It's like whole wheat," she said. "Slightly fatty."

Arnold van Huis, an entomologist at Wageningen University who advises insect breeders and the government, said, "The Netherlands wants to be in the forefront of food."

"I was working in Niger teaching farmers how to control locusts," Mr. van Huis said. "Then I realized that the farmers earned more from the grasshoppers they took from their millet than from their millet crop itself."

He acknowledged that Europeans did not relish insects as food, though he said it was an acquired abhorrence.

"Children have no problem eating them," he said.

Michel van de Ven, 38, and his brother Roland, 40, have been raising insects for 12 years, the last six of them in a large brick barn once used for growing mushrooms. They export 40 percent of their stock to pet shops in Britain, Germany, Portugal and elsewhere; only 1 percent or less goes to supermarkets.

Michel van de Ven sees potential for insects as human food, if customers are not told what is in the product in the beginning. "But later," he said, "people will have learned to eat it."

His brother sees an obstacle other than distaste — price.

"Wholesale, insects are similar in price to beef now," Roland van de Ven said, citing the labor-intensive farming methods used. "Locusts are more like caviar."

Margot Calis, 62, who works with her daughter Marieke on the farm, which employs 10 people, agreed. "The price of insects is much too high," she said. "There is lots of manual labor involved, and it is too expensive."

Mr. Van Dongen of the Sligro chain thinks the investment is worth it, though he admitted: "It will take four to five years; people must get used to it. It's all in the mind."

Most of his customers are restaurants, cafes and snack bars. To attract individual shoppers, he places his insect-laced chocolate samples where they will be encountered first. Only then does he display his samples of insects.

"When they see the bugs, they've already eaten them in the chocolate," he said. "Some people scream, 'Oh, my God!' But if you do it once, then you do it twice."

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Abbas Condemns Killing of Jewish Family

By ISABEL KERSHNER

JERUSALEM — The Palestinian president, Mahmoud Abbas, expressed abhorrence on Monday over the killing of five members of a family in a Jewish settlement in the West Bank. The emphatic condemnation, delivered over Israel's public radio, came after Israel criticized the Palestinian leadership for what it considered to be an initially mealy-mouthed response.

"This act was abominable, inhuman and immoral," Mr. Abbas said in a rare interview with Israel Radio that was conducted in Arabic. Referring to the killing of three of the family's young children, including a baby, he added, "Any person who has a sense of humanity would be pained and driven to tears by such sights."

The victims, Udi and Ruth Fogel, and three of their children, ages 11, 4 and 3 months, were stabbed to death in their beds late Friday in Itamar, near Nablus in the northern West Bank. The assailants, who are still at large, are widely suspected to be local Palestinians.

In the days since the attack, which shocked Israelis across the political spectrum, Israel has accused the Palestinian Authority of an indirect role in encouraging violence, citing incitement in the authority's schools, mosques and news media.

Yossi Kuperwasser, a retired Israeli general given responsibility by the Israeli government for monitoring Palestinian incitements to violence and to hatred of Israel, said in a telephone interview that while Mr. Abbas and the Palestinian Authority prime

minister, Salam Fayyad, had been careful in their words, "they too encourage an atmosphere of terrorism."

He noted, for example, that a senior Abbas aide had paid a call to the families of three Fatah militants killed by the Israeli military, conveying condolences from Mr. Abbas. Israel held the three responsible for the fatal shooting of a rabbi in the West Bank in December 2009. In addition, Israeli officials note, streets, summer camps and youth tournaments in the Palestinian Authority have been named for people who committed terrorist attacks.

The new focus on incitement against Israel, together with Israeli dissatisfaction over the Palestinian response to the brutal attack, seemed to pose a question about the Israeli government's readiness to deal with Mr. Abbas as a serious peace partner — even though Mr. Abbas and Mr. Fayyad are widely considered moderates who have repeatedly said they would never resort to violence.

Mr. Abbas rejected the claims about incitement in mosques, telling Israel Radio that the Palestinian Authority mosques have adopted a unified text for sermons, written by the minister of religious affairs. He called for a joint Israeli-Palestinian-American working committee to investigate claims that Palestinian Authority school textbooks incited violence.

Mr. Fayyad was the first Palestinian official on Saturday to condemn the deaths in Itamar, saying, "We utterly reject violence,

and nothing justifies it."

Mr. Abbas's office issued a statement later that day, through the Palestinian news agency Wafa, saying that he "stressed his rejection and condemnation of all violence directed against civilians, regardless of who was behind it or the reason for it."

Mr. Abbas also called the prime minister of Israel, Benjamin Netanyahu, on Saturday evening to express sorrow over the killings. But Israel said the Palestinian condemnation was hesitant and nonspecific. "The weak and noncommittal condemnation of the Palestinian leadership is insufficient and unacceptable," Mark Regev, a Netanyahu spokesman, said Sunday. "What is required is unequivocal language."

Mr. Netanyahu told a meeting of his Likud Party members of Parliament on Monday that he attached great importance to Mr. Abbas's words of condemnation on Israel Radio, but that it was more important he say such things on Palestinian radio, Israel Radio reported.

Mr. Kuperwasser suggested that Mr. Abbas's condemnation on Israel Radio still fell short. The Palestinian leader emphasized the horrific nature of the killing of the young children and the baby in Itamar, Mr. Kuperwasser said. But he criticized Mr. Abbas for not showing "the same enthusiasm" in condemning the deaths of the parents.

"His words hold great importance in my eyes," he said, "but it is more important that he say these things on Palestinian radio, not just Israel."

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