

Japan Flocks to Ostrich Masks to Help Fight Swine Flu Paranoia

Share | Email | Print | A A A

By Kanoko Matsuyama



June 1 (Bloomberg) -- Japanese researcher Yasuhiro Tsukamoto's flock of 500 ostriches are being enlisted into the global fight against swine flu by exploiting Japan's practice of wearing masks in public to ward off allergies and colds.

Tsukamoto, 40, a veterinary professor at **Kyoto Prefectural University**, was part of a team that investigated the deaths of birds in 2004, when avian influenza hit farms in western Japan. The probe into the virus that killed three-fifths of infected people worldwide spurred him to produce flu-fighting antibodies from ostriches, which are resistant to infectious diseases.

In July, even before the swine flu outbreak surfaced, Tsukamoto began selling, for about \$2 each, **face masks** lined with the ostrich antibodies. The swine flu

circling the globe has heightened the Japanese obsession with wearing face masks, leading shops to sell out plain white surgical types as well as patterned varieties, such as those with Mickey Mouse themes.

"Masks have become part of social etiquette as they give Japanese a sense of security that they and those around them aren't spreading diseases," Masataka Yoshikawa, who tracks consumer behavior at market researcher Hakuhodo Institute of Life and Living, said in a telephone interview from Tokyo.

Millions of Masks

Tsukamoto's Kyoto, western Japan-based **Ostrich Pharma Corp.** makes 1.6 kilograms of ostrich egg-derived antibodies per month, enough to produce 32 million masks. Since July last year, 12 million of the masks have been sold through sites such as Amazon.co.jp, where they're priced around 8,400 yen (\$88) for 36.

The masks are coated with **antibodies** against four strains of flu viruses, including the H5N1 avian variety. The ostrich-based antibodies envelop viruses that come in contact with the mask and disable the germs so that a wearer won't get the flu, Tsukamoto said his research shows.

"I discovered ostriches have a stronger immune system against many infectious diseases among birds," Tsukamoto said from his farm in **Kobe**, western Japan.

Tsukamoto's research comes as drugmakers **GlaxoSmithKline Plc**, **Sanofi-Aventis SA**, and **CSL Ltd.** prepare to manufacture swine flu vaccines, and health authorities track the virus to determine if it mutates into a more serious form during the Southern Hemisphere's winter.

Worldwide infections of swine flu, formally known as H1N1, totaled 15,510 including 99 deaths, or a fatality rate of less than 1 percent, according to the Geneva-based **World Health Organization**. Japan has about 370 cases based on health ministry figures, the highest number in Asia, where no deaths have been reported.

Sold Out

Worry over the spread of flu has led face masks to be sold out in Japanese stores. Masks with prints of Winnie the Pooh from **Namco Bandai Holdings Inc.** are priced at 198 yen each on **Kenko.com Inc.**'s shopping site, 10 times the cost of **Unicharm Corp.**'s plain versions that come in a pack of 30.

Concern about the increasing reach of the virus in Japan, the world's second-largest economy, also caused business and school trips to be cancelled and hotel occupancy to drop. The western prefectures of **Hyogo** and Osaka have been hardest hit, accounting for 95 percent of cases, Ito Mihara, a health ministry spokesman said on May 27.

A total of 13 conferences have been canceled at the Osaka International Convention Center after the first locally transmitted case was found in Japan May 16, Hironobu Matsuo, a spokesman for the venue, said May 21.

Pandemic Panic

“Virulence is weak and the death rate is low, so it has little impact on Japan’s economy for now,” **Takahide Kiuchi**, chief economist at **Nomura Holdings Inc.** in Tokyo, said by phone on May 27. “We will have to be careful about the economic impact if the virus mutates in future and the government orders restrictions on business activities.”

Hiroko Ishiga, 70, waited in a line of about 50 people mostly wearing masks in front of a branch of **Allied Hearts Holdings Co.**’s Lifort drugstore on May 22, hoping to secure some masks after failing at two shops.

“I have only 20 masks left at home,” said Ishiga. “I even tried to call my family in Tottori prefecture, but masks were not available there either.” **Tottori** is about 120 kilometers (75 miles) northwest of Kobe.

Until the outbreak eases, Yukiko Yamaguchi, a resident in Kobe and mother of a 10-month-old baby girl, may move to her parents’ home in **Kagawa Prefecture**, about 110 kilometers southwest across the sea from her house.

Polluted Area

“I am even considering evacuating this polluted area,” said Yamaguchi. “Some might say we are overreacting. I just don’t want to lose my only daughter.”

“We are telling people to wear masks,” Hyogo Governor Toshizo Ido told reporters at a May 22 briefing in Kobe. “I highly thank my citizens for taking care of their own health.”

The flu virus is spread when speaking, sneezing or coughing via respiratory droplets that normally fall to the ground or the nearest surface within a meter, said **Peter Cordingley**, a WHO spokesman in Manila.

People who aren’t well or who are taking care of someone who’s infected should wear masks to protect themselves and others, he said.

“Masks probably serve little purpose in a normal social setting,” Cordingley said by e-mail. “But WHO recognizes that the use of masks is a standard response in Japan to outbreaks of respiratory disease and does not advise against them.”

Not Worth It

Researcher Tsukamoto first tried killing ostriches to derive antibodies from their blood, an effort that “wasn’t worth it.”

“The breakthrough was when I managed to make the antibodies I wanted from their egg yolks,” he said. “The amount of antibodies that can be made from one ostrich egg equals that from 10 liters of their blood, or the amount in one ostrich.”

Antibodies are produced by the immune system in response to infections and illnesses. Versions have been created in laboratories to mute overactive immune systems in some diseases.

Tsukamoto’s research had shown antibodies produced from ostrich eggs to be effective in eradicating avian flu as well as preventing its spread.

In one study, a batch of chicks with H5N1 avian flu was injected with an antibody obtained from ostriches, while a second group of infected birds wasn’t. At the end of five days, 75 percent of chicks in the first group survived with no symptoms, while all in the second died, according to the study published in **Molecular Medicine Reports** in 2008.

Chicks and Filters

Tsukamoto tested the efficacy of antibody-coated filters in preventing the virus’s spread in another study. He placed infected chicks in two boxes, one with a filter infused with antibodies and the other without, and put them in two separate cages containing healthy birds. All healthy chicks in the cage with the antibody filter were alive after four days, while only half survived in the other, according to his study.

Tsukamoto is now testing whether his antibodies are safe and effective as treatments in the event of a pandemic involving a virus as deadly as the bird flu.

“I am building my stockpile of antibodies in anticipation of a life-or-death scenario,” the researcher said after administering some injections to his birds on the farm. “I already have enough to make masks for the whole world.”

To contact the reporter on this story: **Kanoko Matsuyama** in Tokyo at **kmatsuyama2@bloomberg.net**.

Last Updated: May 31, 2009 19:47 EDT