

From VOA Learning English, this is **SCIENCE IN THE NEWS**. I'm Faith Lapidus.

And I'm Christopher Cruise. Today we take you to the West African nation of Burkina Faso. A scientist from Burkina Faso recently won an award for his research on mosquitoes and malaria.

Later on our program, we will tell you how doctors in Burkina Faso are using a simple, low-cost method to test for cervical cancer. And finally, we tell how women in a village in the country's north are showing other women how to make more-nutritious meals.

Scientists are working in a race against time to defeat malaria. Existing drugs and insecticide products are becoming less effective in the fight against the disease and the mosquitoes responsible for its spread.

One of the scientists is Abdoulaye Diabate of Burkina Faso. His country has one of the highest rates of malaria infection in the world. Dr. Diabate found that, during the local rainy season, some houses had up to 900 mosquitoes.

Recently, Britain's Royal Society recognized his research on how to change the mating behavior of mosquitoes. He found the insects mate in large groups, called swarms.

"The important thing about this mating system is that whenever you go into a field site, you will find, you know, mosquito swarm at the same place every single day. And this kind of make it really very easy target, you know to struggle (against) these mosquitoes and see how you can just reduce mosquito density."

Dr. Diabate also found that mosquitoes swarm together to mate in the same place year after year. He says knowing this gives scientists the chance to influence breeding patterns.

“So if you can succeed in killing the male, what will happen is that you will have a strong bias in male and female ratio. So you will have more female than male. And because the female really need the male to mate, and then to be able to lay eggs -- so if there is no male, no mating, no eggs, no mosquitoes. And this case, so no malaria.”

The findings may lead to new malaria control technologies, including genetically engineered mosquitoes and even mosquitoes that are unable to reproduce.

Dr. Diabate’s Royal Society Pfizer Award comes with \$95,000 to be used toward his research. He hopes the news of his winning the prize will motivate researchers across Africa to work on ways of stopping malaria.

Sir Brian Greenwood is with the London School of Hygiene and Tropical Medicine. He served on the award selection committee.

“So far, we’ve relied very much on using insecticide-treated bed nets. But there are concerns of resistance to the insecticides that are used for treating nets. And so really developing novel ways of controlling malaria vectors is very important.”

Malaria kills an estimated 660,000 people every year. Most of the victims are children. The drug company GlaxoSmithKline is making plans to seek permission to market the world’s first malaria vaccine. The vaccine is known by the name RTS,S. The World Health Organization says it could be available by 2015.

Professor Greenwood helped to develop the drug. He says it is not as effective as he would like it to be, but it is better than no vaccine at all.

“It probably gives about 50 percent protection in older children for three -- perhaps three or four years. Unfortunately, it’s less effective in the very young ones who we want to protect. And 50 percent is not 100 percent -- which is what we would like. But, I mean, it is a step in the first, in the right direction.”

The World Health Organization says cervical cancer kills 250,000 women worldwide each year. WHO officials say four out of five of those women live in developing countries, like Burkina Faso.

But there is good news about the discovery and treatment of cervical cancer in Burkina Faso. Doctors there are now using a simple, low-cost method to test for the cancer. They say the test can save thousands of lives every year.

Yacouba Ouedraogo directs the cervical cancer prevention program at a health clinic in the capital, Ouagadougou. He says cervical cancer has become the most common cancer among women in Burkina Faso. But he says finding and treating the cancer in its early forms has recently become much easier.

That is because doctors are using a small piece of cotton covered with distilled white vinegar to test for the disease. The vinegar can be bought at almost any market in Africa. The doctors rub the cotton swab on the opening of a woman's uterus. Any pre-cancerous or cancerous cells will turn white.

Dr. Stanislas Paul Nebie has been using the vinegar test on his patients since 2010. He says it is very simple and unlike other tests, which can be costly and require sending cell samples to a laboratory. With the vinegar test, he says, any problems can be seen immediately and treated during the same visit.

At a medical center in Ouagadougou, women pay four dollars for the test and treatment for any cells that show signs of cancer. Dr. Nebie says this is a good deal considering the high cost of radiology or surgical treatments if the cancer is not caught early. He says medical centers, even in rural villages, can and are performing the vinegar test and suggesting patients for treatment.

Burkina Faso does not yet know how many lives the vinegar test has saved. But doctors in India reported earlier this year on a study there of 150,000 women. The study showed the test had cut cervical cancer deaths by 31 percent.

Most cervical cancer comes as a result of the human papilloma virus, which is passed through sexual contact. The disease often has few signs until it reaches advanced stages. When it becomes more advanced, it becomes more difficult to treat. Women simply do not know they have it -- sometimes until it is too late.

One-third of children under the age of five in Burkina Faso are chronically malnourished -- not getting enough nutrition for good health. But the country's Ministry of Health says the issue is not always a lack of food. Officials say the problem may instead be a lack of the right foods.

Recently, a group of women from one village launched an effort to improve the diet of local children. They began training other women how to better cook foods to keep hold of nutrients and prepare nutritious, well-balanced meals.

Thirty-four-year-old Salimata Sana lives in the village of Bougounam in northern Burkina Faso. On this day, she is cooking porridge enriched with vitamins. A small group of women is watching and asking questions.

Ms. Sana tells the women “regular millet porridge doesn't give children health and strength like this enriched porridge does.” She says she added ground peanuts for protein and fat. She also added ground-up leaves from nearby moringa trees, which have large amounts of calcium and vitamins. The mixture also includes some milk, oil and sugar to make the soup taste better.

She tells the women they should start giving this enriched porridge to their children when they reach six months of age.

An aid agency trained Salimata Sana and other women in Zondoma Province how to give their children more nutritious meals. The enriched porridge is just one example.

Ms. Sana also tells women in neighboring villages not to over-cook vegetables. She tells them that boiling them in water for longer than 5 or 10 minutes removes nutrients. And she tells them that children need to eat a mix of fruits and vegetables, not just a serving of white rice.

Burkina Faso's Ministry of Health says good nutrition is about both the size and quality of food.

Betrine Ouaro is the head of the ministry's nutrition department. In her words, "Foods need to be rich. Our grains are good, but you need to complement them with proteins, fruits and other vitamin-rich foods." Ms. Ouaro says "it is not enough to give a young child millet porridge and think they have a balanced diet."

She adds that mothers will often say their children are well fed because they do not feel hungry. But she says having a full stomach is not a sign that the child is well nourished.

The World Food Program says 88 percent of children under the age of five in Burkina Faso do not get enough micronutrients, such as iron, iodine and zinc. Micronutrients are important for children because they help their bodies grow.

The Ministry of Health reports that 10 percent of children under the age of five suffer from severe malnutrition. But more than 20 percent of the country's young children weigh less than they should.

One reason is poverty. The World Bank says almost half of the country's people live below the national poverty line. Foods like fruit and meat can cost a lot.

Back in northern Burkina Faso, Salimata Sana says mothers want to feed their children the best possible food.

But she says "it can be hard sometimes to pay for bananas and tomatoes or other produce." In her words, "many fruits and vegetables are only available in the city, not in the villages. Many families can't afford to eat more than millet every day. It's just too expensive."

Ms. Sana says that is why telling women how to make enriched porridge is so important. The peanuts are grown locally, and women can gather the tree leaves for free. She says making porridge more nutritious can help growing children in a big way.

This Science in the News program was based on reports by Henry Ridgwell in London and Jennifer Lazuta in Ouagadougou. It was written by Christopher Cruise, and produced by June Simms. I'm Faith Lapidus.

And I'm Christopher Cruise. Join us again next week at this time for more news about science in Learning English on the Voice of America.