Tribune

Boy suspended for eged gun threat. A3.

Vikings all but out of playoffs. B1.

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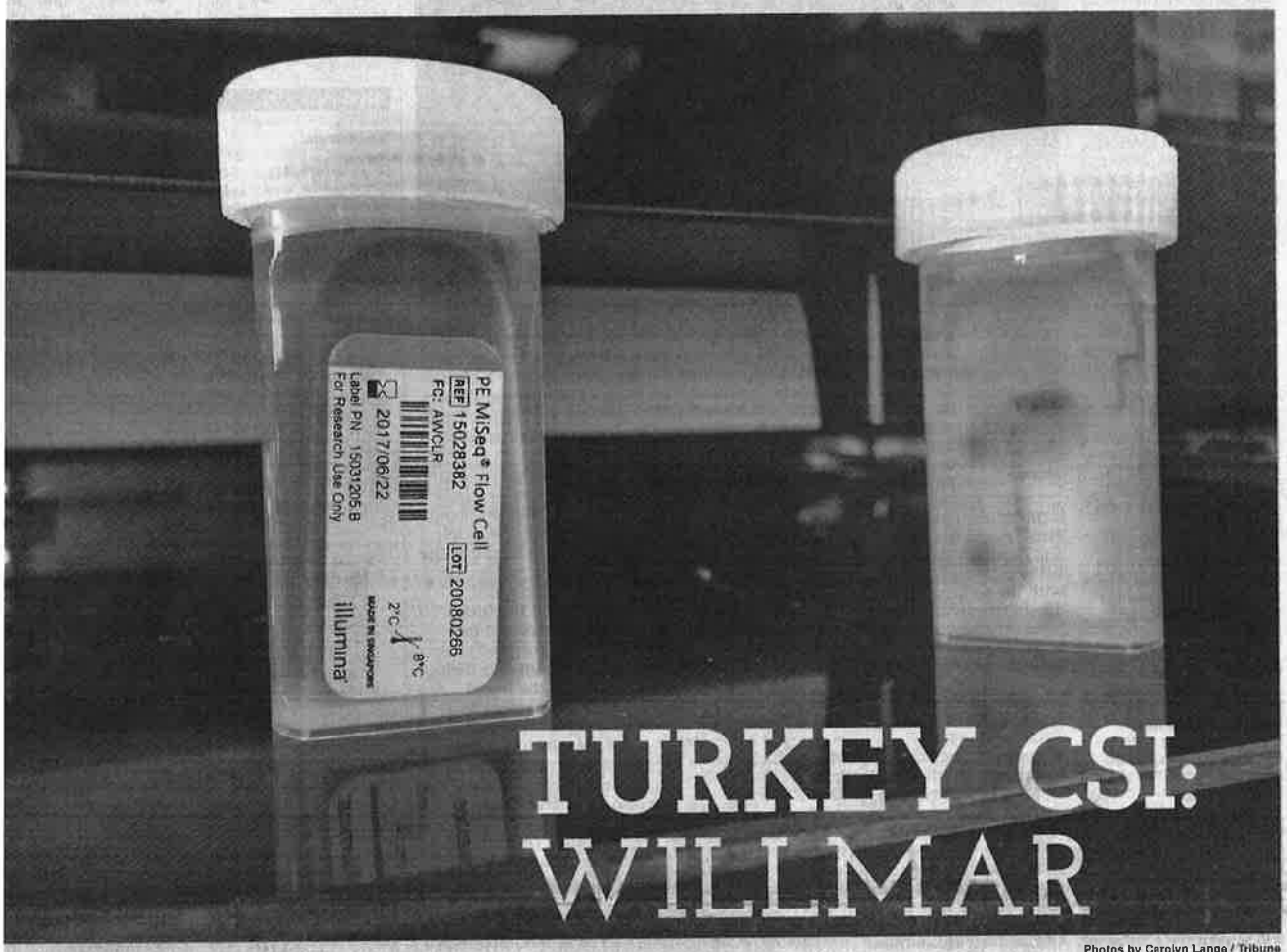

TURKEY CSI: WILLMAR

Photos by Carolyn Lange / Tribune

ese containers are used in the DNA sequencer at the Mid-Central Research and Outreach Center lab in Willmar. Watch the video on www.wctrib.com.

Chad Richardson / Forum News Service

use Speaker Kurt Daudt, left, answers a question House minority leader-elect Melissa Hortman tens Monday during the Forum News Service-onsored pre-session briefing in St. Paul.

Dayton, Daudt head into session with a 'damaged relationship'

y Maureen McMullen and Don Davis
Forum News Service

ST. PAUL – The two p Minnesota political aders will approach e legislative session in nuary with a "dam-

"I don't see a single reason why we shouldn't do this (special session)

U of M, poultry industry team up to purchase DNA sequencer

By Carolyn Lange
clange@wctrib.com
WILLMAR

A high-performance, high-resolution DNA sequencer – equipment typically reserved for metro scientific communities – arrived in Willmar last month to help provide solutions to problems facing the turkey industry.

Funding for the $100,000 Illumina MiSeq sequencer is a cooperative effort between the University of Minnesota and four companies in the poultry industry, including Jennie-O Turkey Store and Willmar Poultry.

Housed in the research laboratory on the third floor of the University of Minnesota Mid-Central

DNA: Page A2

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Cristian Flores Figueroa, seated, Jeannette Munoz Aguayo, center, and Jessica Jimenez look at data on the DNA sequencer that arrived a month ago at the Mid-Central Research and Outreach Center lab in Willmar.

Kandiyohi County makes progress

DNA

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Research and Outreach Center, which is located on the MinnWest Technology Campus in Willmar, the sequencer completed its maiden run on DNA from turkey litter.

It's hoped the "huge amount of data" the sequencer is able to generate can "transform the way that we can do diagnostics and research projects," said Tim Johnson, an associate professor of microbiology at the University of Minnesota's Department of Veterinary and Biomedical Sciences.

Johnson also spends several days a week at the Mid-Central Research and Outreach Center conducting research on poultry diseases and searching for probiotic substances as an alternative to adding antibiotics to poultry feed to prevent disease.

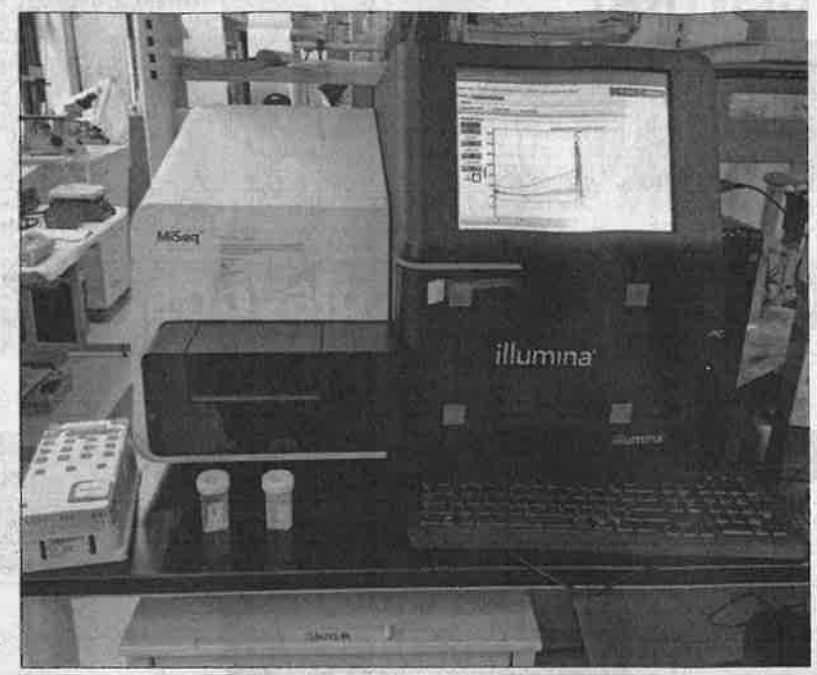
Starting Jan. 1, the Food and Drug Administration is implementing new restrictions and procedures that change how livestock producers may use antibiotics in feed to promote growth of animals used in food production.

The action is being taken to address concerns about antibiotic resistance that could threaten public health, according to the FDA.

That has the poultry industry seeking alternatives, including researching the gut health of birds and how probiotics, such as essential oils, could promote animal health, Johnson said.

Besides identifying the "DNA fingerprint" of bacterial, fungal and viral components, it's hoped that DNA sequencing on the turkey litter in the Willmar lab will also provide answers about genes that make livestock resistant to antibiotics.

Finding "science-based solutions" to the issue of antibiotic resistance will not only help livestock producers but also consumers, Johnson said.



Carolyn Lange / Tribune

This $100,000 DNA sequencer was installed at the Mid-Central Research and Outreach Center lab a month ago thanks to funding from the University of Minnesota and private companies, including local poultry companies. The equipment is being used to study poultry diseases and possible alternatives to using antibiotics.

Johnson

One of the goals of the Mid-Central Research and Outreach Center is to help researchers interact with the poultry industry "more frequently and at more intimate levels" to discuss needs the industry has that could potentially be addressed through scientific research.

Getting the DNA sequencer brings that research to another level.

"It will improve the speed and the resolution of our ability to detect pathogens of the bad bacteria and the bad viruses," Johnson said.

It will also help researchers understand how pathogens "move around" and to examine "emerging diseases of poultry and other animals and to be able to quickly identify what's causing problems," he said.

That collaboration will help "solve poultry industry problems" and augment the University's research mission to be "more relevant to the poultry industry and the State of Minnesota."

Establishing a poultry research lab in the heart of poultry country was one of the goals the University of Minnesota had when it opened the facility in 2012 in Willmar.

Getting the DNA sequencer is icing on the cake.

Having this type of equipment in Greater Minnesota is "really quite unique," Johnson said.

"We have probably only a handful of these types of sequencers in the state and all of them are in the Twin Cities or Rochester, at the University or the Mayo facilities," he said.

"This is the first sequencer of this kind to be put in outstate Minnesota in a region that's heavy in animal agriculture versus human medicine," Johnson said, adding that having the equipment here adds a speed component if there is a disease outbreak and answered are needed fast.

It costs between $1,500 and $2,000 to do a DNA test – which takes about 48 hours – but multiple samples can be run at the same time.

The partners that helped fund the DNA sequencer receive the service at cost and are waiting in line for their projects to be tested. Other companies can also access the service for their own research needs as part of the University's efforts to collaborate with businesses.

Running DNA through the sequencer is just part of the process.

Johnson said the University also provides bioinformatic support to analyze the data. Privacy policies are in place to protect sensitive company data during the process, he said.