

# Local students make mark at national science fair



By Ian MacAlpine

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One may not believe cows belching would be a global warming issue, but Calvin Park Public School student Evan Sharma found out it is.

That research proved pretty valuable, winning him a gold medal and other prizes at the Canada-Wide Science Fair last week in Regina.

Sharma and four other Limestone District School Board students qualified for the national competition after taking top honours at the Frontenac, Lennox and Addington Regional Science Fair at Queen's University at the end of March.

They travelled to Regina with an adult chaperone and competed against approximately 500 other students from across the country.

In his research, Sharma, a Grade 8 student in the Challenge Program at Calvin Park, offered some solutions to the problem.

“Cow burping releases methane and carbon dioxide which accounts for 15 per cent of greenhouse emissions. In this project, I wanted to determine if an enzyme, called methane monooxygenase, can lower methane levels from a simulated cow rumen which I created by making kimchi and adding cow cud,” Sharma said in a statement. “I also tested the enzyme on brine shrimp to make sure that it was not toxic.”

His project — “MMO Cow: How microbiome changes can lower methane emissions from livestock” — won him a Gold Excellence Award, Environmental Challenge Award and 4-H Canadian Sustainable Agriculture Award, as well as a \$4,000 scholarship from Western University.

His other awards got him \$750 in cash.

Also winning awards were: Keiran Barr, with a Gold Excellence Award and Health Challenge Award, and Matthew Pilkey, who won a Silver Excellence Award. The pair also received scholarship money from Western.

The three award winners attend the Challenge Program at Calvin Park along with Arjun Devnani, who also participated at the national event. Cameron Smith, a student from Kingston Collegiate, rounded out the local contingent.

Barr’s project — “Nicotinamide: Novel skin cancer chemoprevention” — looked at a new prevention method for skin cancer. Pilkey’s project was named “Could taking vitamins be bad for you?”

Devnani’s project “Piezo Power (Energy Harvesting)” and Smith presented “What Lurks in Your Water?”

In a telephone interview, Sharma said that due to the sheer volume of cattle found around the world, their belching is an important environmental issue.

“Greenhouse gases contribute to global warming,” he said.

He added that scientists are predicting that if global warming continues at this rate, there will be flooding or fertile farms will turn into desert.

“So it’s definitely an important subject matter,” he said.

Sharma found that eating a pound of beef is equal in environmental impact to driving about 110 kilometres in a standard vehicle.

"That's an astonishing statistic," Sharma, who eventually wants to become a medical doctor, said.

David Creber, chair of the Frontenac, Lennox and Addington Science Fair, said the students' travel, registration and accommodations to attend the competition were paid for by the sponsors of the regional science fair. The regional event is run by volunteers, Creber said, and is not affiliated with any local school boards.

With Sharma, Barr and Pixley taking top honours at the regional fair and doing well nationally, it speaks to the quality of students in the area.

"We're quite happy to see that, and it's a question we always have: How are Kingston's young scientists competing with the rest of the country."

Also, area judges seem to be in agreement with their national counterparts, Creber said.

"[Sharma] was our best-of-fair winner, so the rankings played out the way that we had at the regional fair to what happened at the national fair," he said. "These kids are excelling and showing on a national level.

"We're quite proud of our kids, it's an individual effort by the children that did succeed and we're really happy to give them the form and we're doing better and better every year."

The event, which is held in a different city every year, last year it was in Montreal and in 2015 in Fredericton.

[imacalpine@postmedia.com](mailto:imacalpine@postmedia.com)

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