

Sprouts in space: B.C. alfalfa will launch on a SpaceX rocket

By [Jenny Peng](#) Star Vancouver

Thu., March 7, 2019

VANCOUVER—Last fall, when a student showed up at Carmen Wakeling's farm on Vancouver Island wanting to know more about the alfalfa she grows, she had no idea her seeds would be launched into space this summer. Wakeling gave the student some seeds, books, supplies and shared her process of getting the seeds sprouted, said the CEO and co-owner of Courtenay-based Eatmore Sprouts & Greens, which grows 10,000 pounds of organic microgreens and sprouts a week.



Alfalfa seeds were chosen to be tested at the International Space Station for their nutritional value and ability to multiply in quantity once grown. (THE CANADIAN PRESS FILE)

The student was part of a team of five at École Ballenas Secondary in a Grade 12 science research methods class that was testing whether they could grow alfalfa in a zero-gravity environment. They had their sights set on competing in an international student space flight competition based in Virginia, U.S. The project was chosen by a panel of academics and NASA employees. In July, it will be launched in a SpaceX rocket from the Kennedy Space Center in Cape Canaveral, Fla., destined for the International Space Station. Carl Savage, the students' teacher who also teaches astronomy and physics, said the team picked the vitamin-K-rich alfalfa because its nutritional value can slow down bone loss — a health concern for astronauts whose bones can become weakened in space because they don't have to do as much weight-bearing in zero gravity. On missions, astronauts lose about one to two per cent of their bone density a month, which can become a serious health problem on long-duration space missions like ones planned for Mars, according to the Canadian Space Agency. As soon as the students approached Wakeling, she took them under her wing, teaching them how long the seeds need to be exposed to water before they start growing and handing them books on home sprouting projects. They also discussed soaking times, sanitation and the benefits and risks of sprouts. "That (sanitation) was important for them to understand that produce is intrinsically considered high-risk food, so sprouts are no different. But we eat produce all the time, so how do we as producers make it the best we can make it," said Wakeling, who has been running Eatmore Sprouts & Greens for 30 years. Its products are sold in giant grocery chains throughout B.C. She has given them six pounds of sprouts and microgreen seeds in different varieties with different nutritional values. Another factor in why alfalfa was chosen was that it grew quickly and can be turned into a food source in three days. Every pound of seeds turns into 10 pounds of sprouts, which reduces the weight in cargo and helps save money in costly rocket fuel. Once launched, the experiment will stay up in space for roughly four weeks and be tested by the astronauts along with 40 experiments that were chosen from around the world. Once the astronauts test out their experiment, the specimens will be returned to Earth and the team will compare them to a ground experiment running at the same time to see whether zero gravity has any effect on the growth rate of these sprouts. Savage said Wakeling's mentorship was instrumental in getting their experiment chosen. "Through their help, the students were able to write a really good proposal and that really won them that spot on the ISS. (It) was all the great resources they got from the community and continue to get," Savage said. The students are especially eager to see their project in space because the next step in space travel will be long-term journeys to places like the moon, an asteroid and then finally to Mars, said Savage. They're hoping that they can prove this is a viable food source for long-term space flight," he added. Having gone through the experience of being the regional school co-ordinator for the student space flight competition, Savage noticed that some students were hesitant to take chances and risks to enter the competition. "Students — both male and female, but of course we want this influx of females to balance out the system to make it more equitable for everybody — they need to take that chance and try."



Carmen Wakeling, co-owner of Eatmore Sprouts & Greens mentored students on the growing process for their experiment that will be launched into space this summer. (EATMORE SPROUTS & GREENS)