

USU's Space Crop Expert Separates Fact from Fiction on Farming in Space

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Professor Bruce Bugbee's job title, director of Utah State University's Crop Physiology Laboratory, conjures thoughts of a scientist whose work is firmly rooted in the earth. Rooted in the earth on Earth, that is. But for the past 33 years, the majority of Bugbee's research has focused on how to grow food in space.

The book and now major movie *The Martian* makes growing food in space, or more precisely, on Mars key to the hero's survival. As sci-fi fans head to theaters to see how fictional astronaut Mark Watney figures out how to survive, Bugbee has been busy explaining some of the finer points of the science of growing plants in space to reporters and examining what the story gets right and where it's more fiction than science.

Fielding questions from journalists and writing invited guest commentaries isn't the usual day's work for the Department of Plants, Soils and Climate faculty member, but Bugbee considers it part of his job as an educator.

"Every decade or so a science fiction story ignites the collective imagination for what might be, Bugbee said.

"*The Martian* is one of those stories. It speaks to the fundamental satisfaction of growing our own food: in gardens, on rooftops, and in our living rooms in the winter. I am fortunate to be working with NASA on the challenges of food production in space. It's a topic that engages

intellects and inspires people to become more food self-sufficient."

After reading the book that inspired the movie, Bugbee observed, "Mark Watney would have benefitted from taking a few courses in USU's Department of Plants, Soils and Climate— Soil Science 3000, for example. Watney figured he needed to add 40 liters of water per cubic meter to powder dry Martian soil and that would be enough to grow potatoes. This equates to less than three tablespoons of water to a liter of dry soil. Soils need five to eight times this much water for productive crop production. But don't get hung up on the errors. Correct them with a green pen and enjoy the science fiction."

National and International Media Mentions

Read about where Bugbee and others say *The Martian* gets the science right and wrong in coverage from around the world.

- [Mashable](#) - [The Science of 'The Martian': What Checks Out \(and What Doesn't\)](#)
- [Huffington Post](#) - [The Martian: Farming on Mars is Not Science Fiction](#)
- [Tech Crunch](#) - [NASA Astronauts Can Already Farm on Mars](#)
- [Statesman Tribune](#) - [Astronauts of NASA Are Already Farming on the Red Planet](#)
- [Discovery Channel News](#) - [Space Experts Swoon for 'The Martian' Despite Inaccuracies](#)
- [Popular Mechanics](#) - [Can You Actually Grow Potatoes on Mars?](#)
- [Business Insider](#) - [Space experts swoon for 'The Martian' despite inaccuracies](#)
- [Tech Insider](#) - [Could we really mix feces into Martian dirt and grow potatoes?](#)
- [JapanToday](#) - [Space experts swoon over 'The Martian' despite inaccuracies](#)
- [Celeb Cafe](#) - [Matt Damon to attend premiere of The Martian](#)
- [The Weather Space](#) - [Mars has liquid water, NASA findings suggest](#)
- [The Daily Telegraph – Sydney Australia Newspaper](#) - [NASA's Mars announcement stokes interest in new film The Martian, starring Matt Damon](#)
- [el Nuevo Herald – South Florida Newspaper](#) - [Lo cierto y lo falso en 'The Martian'](#)
- [el Tiempo – Colombian Newspaper](#) - [Lo verdadero y lo falso en la nueva película de Matt Damon](#)
- [Huffington Post France](#) - [Seul sur Mars : ce qu'en dit la science](#)

- **Globo – Brazilian Television Network** - Cientistas apontam erros e acertos do filme 'Perdido em Marte'
- **Apple Daily – Taiwan Newspaper**- ##### ######
- **el Carabobeno - Venezuelan Newspaper** - Película "Marte" muestra dificultades que enfrentarán astronautas
- **Radio Télévision Belge Francophone – public broadcast system for the French Community of Belgium** - Les experts de l'espace sont fans de "Seul sur Mars", malgré ses hics scientifiques

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