

Author, scientist inspired by Martian spud research

By JOHN O'CONNELL
Capital Press

IDAHO FALLS, Idaho — As a retired potato seed pathologist who also writes science fiction novels, Phil Nolte will pay close attention when NASA and the International Potato Center seek to prove the plausibility of growing potatoes on Mars.

The experiment could help validate a central theme in one of Nolte's favorite books, "The Martian," by Andy Weir, which brought the concept of raising spuds on the Red Planet to the world's consciousness.

Nolte, who retired in early 2015 from University of Idaho and released his fourth novel, "The Deimos Artifact," on Dec. 15, understands authors must sometimes stretch the truth for the sake of a good story. With a few plot tweaks, Nolte believes the crop production system described in "The Martian," now a major motion picture, could be made "good enough."

Stretching the truth, however, won't be an option when a team of scientists seeks to raise potatoes in Peru, in conditions simulating the growing environment of a hypothetical climate-controlled dome on Mars.

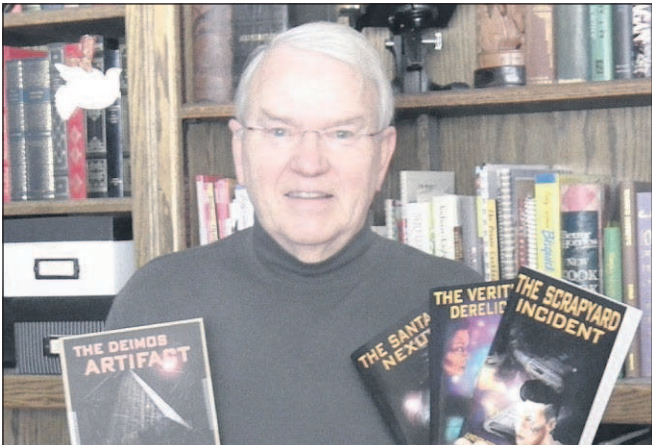
Without artistic license at their disposal, Nolte has no idea if the simulation will succeed, but he sees value in the effort.

"I'm one of those people who at least hopes we manage to colonize other places besides just the planet we're on now," Nolte said. "A first step to try to make things like that happen is to try to create environments like this and see how your food source would do."

Nolte said sunlight would



Phil Nolte, a retired potato seed pathologist who writes science fiction novels, speaks prior to his retirement from University of Idaho during a tour of potato research plots at the UI's Aberdeen Research & Extension Center. Nolte has offered an assessment of the science behind potato production on Mars included in the book and movie "The Martian" and is intrigued by proposed research to test potato production in a simulated Martian environment.



Phil Nolte holds several science fiction novels.

have to travel much farther to reach spuds on Mars, and researchers will have to find contingencies for extreme

awareness of the incredible resilience of potatoes" and should demonstrate that farming is possible in the most challenging of environments on Earth. The researchers also believe the project will provide valuable insight into production possibilities in the face of climate change.

Soil from the Pampas de La Joya Desert in Peru will be used to simulate Martian dirt, and the atmosphere will be manipulated in a laboratory to have 95 percent carbon dioxide, as on Mars.

"We need people to understand that if we can grow potatoes in extreme conditions like those on Mars,

we can save lives on Earth," Joel Ranck, an International Potato Center spokesman, said in the press release.

In Weir's story, stranded NASA astronaut Mark Watney plants spuds, originally packed for a holiday meal, using his own excrement as fertilizer.

Nolte's major criticism of the science in the book is that spuds would either have to be treated with a sprout inhibitor, which would hinder growth, or they would break dormancy much too soon during the roughly

10-month journey to Mars. Furthermore, Watney immediately replanted the seed tubers he raised, though Nolte notes potato seed requires a dormancy period before sprouting.

To fix the discrepancies, Nolte suggests the author could have explained the presence of the potatoes as part of a science experiment, perhaps proposed by a major chemical manufacturer testing a new sprout inhibitor. Watney could then break dormancy in both the initial seed supply and the seed saved for replanting with a chemical included for the company's experiment.

Nolte noted seed potato certification programs in Idaho and other major spud states use chemicals, such as gibberillic acid or rindite, to induce sprouting of seeds harvested during fall and planted shortly thereafter in winter trial plots in warmer climates. Nolte has also read reviews by critics who doubt Watney could have produced enough "fertilizer."

However, Nolte approves of the author's choice of using a potato as the astronaut's staple food.

"The potato is short a couple of amino acids from being a perfect food," Nolte said, noting researchers tried several years ago to introduce those missing amino acids to the potato through biotechnology.

Nolte acknowledges he may be nitpicking, but he believes attention to detail is the key to helping readers suspend their disbelief. He's sold roughly 13,000 copies of his first three space odysseys. Coincidentally, his latest book is named after a moon of Mars.

Forester teaches tree owners management

Chris Schnepf develops master forest steward programs

By MATTHEW WEAVER
Capital Press

COEUR D'ALENE, Idaho — When forest owners in the Idaho Panhandle began noticing an increase in the snowshoe hare population, Chris Schnepf went looking for an expert.

When he couldn't find one, Schnepf put in the time to research the hare compared to other possible causes of damage to young trees and shrubs, grasses and other plants. Schnepf hasn't gotten a lot of calls about damage yet, but said the hare population goes through a nine- or 10-year cycle.

It's all in a day's work for Schnepf, University of Idaho Extension educator for forestry in the Idaho Panhandle. He's worked for the extension service since 1988.

Schnepf speaks to a broad audience that includes family forest owners, who own roughly 40 percent of the forest land in the panhandle; loggers; and professional foresters.

"My goal is to give them enough forest ecological literacy to make decisions that are going to help them meet their goals in their forest," he said.

Working in the forest is not the main job for most family forest owners. Schnepf estimated only a few dozen in the region earn the majority of their income from logging. Some are also farmers.

"Most (family forest owners) have very little training on their forests, even simple things like tree identification," he said. "It's very different from cereal producers, where you have people who have been growing a crop most of their lives and do a fair amount of management activity every year. A lot of our time is spent giving people a basic literacy on forestry and forest ecology."



Chris Schnepf, University of Idaho Extension area educator in forestry, talks about his work outside the UI Extension office in Coeur d'Alene, Idaho. Schnepf provides experienced foresters and first-time small forest landowners with the information they need.

Schnepf works with loggers and forest owners to determine how their needs can influence UI research. Loggers in particular are looking for more efficient and sustainable timber management methods, he said.

Al Kyle in Athol, Idaho, is part of the master forest stewards program, designed by Schnepf so that experienced foresters can advise newcomers.

"He's a personable person — he's interested in the people and helping them to really manage what they have better all the time so we can improve the health of the forests all

Chris Schnepf
Occupation: Area Extension Educator-Forester
Hometown: LeMars, Iowa
Current location: Coeur d'Alene, Idaho
Age: 54
Family: Married, three children
Website: <http://www.uidaho.edu/extension/forestry>

over the state," Kyle said of Schnepf. "He's effective. He's been a real asset to the forest community."

Janet Benoit in Careywood, Idaho, is also a master

forest steward.

"I think he has had quite an impact with those people who actually want to learn something about their property," Benoit said. "He makes certain he is hitting what they think they need to learn."

Schnepf enjoys the reactions from people who are "grateful to learn something new about something they were struggling with."

"I work with so many people who just love to learn about this stuff," he said. "You get energized by that. It's a real high satisfaction job."

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