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Green Thumbs for the Red Planet JACQUE JACKSON, DAVID ALLRED, NIKI BRIMHALL, Brigham Young University — In the famous book, The Case for Mars, Robert Zubrin discusses how resources readily available on Mars could easily be used to construct a greenhouse. This project tests his proposition that plants can be grown in Mars-ambient levels of carbon dioxide. Previous tests have shown that it is possible for plants that have been growing under normal conditions can survive for a period of time in Mars-ambient levels of carbon dioxide, but it has not yet been tested exactly how long they can live under such conditions, nor whether they can be planted and grown in such conditions. We also propose an excellent candidate for a Martian greenhouse plant, namely a Bolivian grain called quinoa. Quinoa is efficient because the entire plant's leaves, root, stem, and fruit are edible and nutritious. Also, quinoa is promising because it is a robust plant accustomed to low pressures and cold temperatures. If it proves possible to grow and cultivate plants in Mars-ambient levels of carbon dioxide, future exploration of Mars would be greatly benefited.

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