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摘要：采用傅里叶变换红外光谱法(FTIR)对第二代太空胡芦巴与地面组进行对比分析。结果表明，经航空诱变后的胡芦巴种子红外光谱的主要吸收峰的峰位、峰形与地面组的胡芦巴种子基本相同，表明其主要成分和基本结构并未发生变化。但1745cm<sup>-1</sup>处羰基(C=O)的伸缩振动和1074cm<sup>-1</sup>处的C-O伸缩振动明显强于地面组，说明太空胡芦巴种子中油脂类及皂苷有效成分含量明显增加；2927cm<sup>-1</sup>和2855 cm<sup>-1</sup>处亚甲基CH<sub>2</sub>的伸缩振动吸收峰明显强于地面组，说明经太空搭载后亚甲基的振动增强。此外，二阶导数谱显示在1658cm<sup>-1</sup>，1544cm<sup>-1</sup>处的吸收峰也较地面组的高，说明太空胡芦巴组的蛋白质和氨基酸物质的含量也较高。

关键词：胡芦巴, 太空育种, 傅里叶变换红外光谱法

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### Research on the second generation of fenugreek seed by FTIR

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Abstract: The Fourier transform infrared spectroscopy (FT-IR) was used to analyze and appraise the outer space fenugreek (*Trigonella foenum-graecum* L.) seeds of the second generation (Space group) and its ground group (CK). The results indicated that the major components and the structures remained intact. However, the outer space fenugreek seeds The intensity of peaks at 1745 cm<sup>-1</sup> and 1074 cm<sup>-1</sup> is stronger than the ground group, indicating that fat and aponins contents were enhanced obviously. The peaks at 2927 and 2855 cm<sup>-1</sup> were assigned to- CH<sub>2</sub>-groups, and the intensities at 2927, 2856 were stronger than ground group. In addition, the second derivative spectra shows that the intensity of protein absorption peak at 1658 and 1544 cm<sup>-1</sup> were stronger than the ground group, indicating that protein and anima acid content were higher than ground group.

Key words: *Trigonella foenum-graecum* L, Space breeding, The Fourier transform infrared spectroscopy

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