

Peiwu Li¹

Jin Mao^{1,2}
 Ling Cheng¹
 Xianglong Yang¹
 Xiaoqian Tang¹
 Liangxiao Zhang^{1,2}
 Qi Zhang^{1,2}

¹ Oil Crops Research
 Institute, Chinese
 Academy of Agricultural
 Sciences, Wuhan, China

² Hubei Hongshan
 Laboratory, Wuhan,
 China

Background & Objective:

Rapeseed is rich of essential fatty acids, vitamin E, carotene, calcium, and other elements. As an important source of edible oil, rapeseed not only provides energy but also a variety of nutrients for animals and humans, and therefore possesses various health effects such as boosting immunity, promoting digestion, preventing anaemia, and decreasing blood lipids. Rapeseed has been used as a source of edible oil in the last thousand years, but now the crop can serve as a vegetable, tourism flower, honey, forage and fertilizer, according to the growth period. This abstract mainly summarizes the development of the main multiple functional utilization of rapeseed in China.

Results:

Use of rapeseed mainly as a source of edible oil in the past has limited its economic benefit. In recent years, the multiple functional utilization of rapeseed has been explored in China, and the high efficiency and new development modes have been initially established. For instance, double-low rapeseed oil is one of the healthiest vegetable oils containing less than 7% saturated fatty acids, and the ratio of linoleic acid to linolenic acid conforms to the recommended range of WTO. Rapeseed stalks is a kind of popular, health and palatable vegetable, which is rich in vitamin C, vitamin B and trace elements such as Zn, Ca and Fe. As a tourism flower, it has bright color with more than 20 colors and long flowering period about 30 days, which has become a kind of characteristic agricultural tourism, and forms part of a "Tourism Culture Festival" especially in Wuyuan, Jiangxi province. And as an important nectar source, rapeseed flower with large area and long flowering period can produce abundant nectar and pollen, which accounts for more than 40% of total honey production. In addition, the stem and leaf of rapeseed with high yield and rich nutrition can be as forage that alleviates the lack of green feed for herbivorous livestock in winter and spring. As a green fertilizer, it can improve the soil fertility, kill harmful insects and bacteria, reduce the consumption of chemical fertilizer, and preserve the ecological environment.

Conclusions:

Based on above advantages, it can be found that the multiple functional utilization of rapeseed plays a more significant role in modern agriculture that can achieve good economic benefits, increase farmers' income, promote the integration of culture and tourism, and ensure sustainable ecological development. Therefore, the advanced biological breeding for multiple functional utilization, more support strength from government, and in-depth integration between culture and tourism resources, may be effective measures for the development of rapeseed multiple functional utilization in future.

References:

- Zhang, Z., Yin, Y., Liu, F., Wang, J. J., & Fu, T. D. (2018). Current situation and development counter-measures of Chinese rapeseed multifunctional development and utilization. *Chinese Journal of Oil Crop Sciences*, 40(5): 618-623.
- He, X. Y., Wu, Y. Q., Zu, F., Zhang, Y. Y., Fu, M. L. (2021). Exploration and practice of rural revitalization assisted by multi-functional development and utilization of rapeseed. *Hubei Agricultural Sciences*, 60, 442-446.