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**Modeling of biomass-based leaf morphological parameters on main stem for rapeseed (*Brassica napus* L.)****Wenyu Zhang, Weixin Zhang, Daokuo Ge, Hongxin Cao, Yan Liu, Shouli Xuan, Kunya Fu, Chunhuan Feng and Weitao Chen**  
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To quantify the relationships between main stem leaf morphological parameters for rapeseed and the corresponding leaf biomass, field experiments on varieties, transplanting densities and fertilizer were conducted in 2011 to 2012 and 2012 to 2013 seasons. The biomass-based leaf morphological parameter models for rapeseed on main stem were constructed through observing leaf length, maximum leaf width and leaf petiole length under various treatments and analyzing the relationships between leaf morphological parameters and the corresponding leaf biomass. Because both of the leaf length and leaf width were positively proportional to the square root of the corresponding leaf biomass, meanwhile the leaf petiole length was positively proportional to the corresponding leaf length, thus, the changes in the leaf length, the maximum leaf width and the leaf petiole length with the square root of the corresponding leaf biomass for different treatments could be described with linear function. The biomass-based leaf morphological parameter models were validated using independent experiment data and the results showed that the model revealed satisfactory predictions of leaf length, leaf width and leaf petiole length, except the simulation for leaf petiole length of Ningyou 16. The research provides a mechanistic method for linking the rapeseed growth model with the morphological model using organ biomass and lays a foundation for the establishment of functional-structural plant models of rapeseed.

**Biography**

Wenyu Zhang has completed his PhD from Nanjing Agricultural University, China. He has published more than 26 papers in journals and has been serving as a member of Computer Application in Agriculture Chapter of Chinese Association of Agricultural Science Societies and The Youth Committee of Jiangsu Society of Systems Engineering.

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