

Title: Early season mapping of winter wheat in China based on Landsat and Sentinel images

Author(s): Jie Dong, Yangyang Fu, Jingjing Wang, Haifeng Tian, Shan Fu, Zheng Niu, Wei Han, Yi Zheng, Jianxi Huang, Wenping Yuan

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General Comments:

Early season crop identification is difficult but also important for monitoring crop growth and predicting yield. As one of the most important cereal crops in China, the winter wheat distribution maps over regional scale with high spatial resolution is scarce. This manuscript developed accurate winter wheat maps with 30 m spatial resolution based on a phenology-based vegetation index. Moreover, this method requires low volumes of training data and can identify winter wheat by the end of March, three months earlier before harvest. These database are valuable and the method is also instructive for other crops identification. This manuscript is well organized. I suggest a minor revision.

Specific Comments:

Line 23: Make sure the use of “correspondence” is suitable or not?

Line 26: What “crop conditions” is? It is ambiguous.

Line 35: Does “quantity” mean area of winter wheat?

Line 36: suggesting delete “production”.

Line 53-54: “The common method differentiates winter wheat and other

crops based on.....”, differentiate....and or differentiate....from?

Line 56: efficient or effective?

Line 80: timeliness?

Line 84-85: suggesting delete “amount of” and “available”.

Line 87: “investigated”?

Line 104-106: rewrite the sentence.

Line 123: “at each investigated pixel” or “of each investigated pixel”?

Line 123-127: It would be more robust if the determination of dissimilarity thresholds did not rely on census data.

Line 141: Good ideas!

Removing the disturbances of other winter crops using various data is important. Especially, when this method was used in summer crops such as corn, the seasonal changes of NDVI may be difficult to differentiate corn from other summer crops, other data (such as plant growth height, spectrals) in key phenological phases should be taken more consideration.

Line 154: “avoid” replaced by “exclude”?

Line 156: differentiate.... from?

Line 157-159: rewrite the sentence.

Line 187: differentiate...from?

Line 232: 89.88% is repeated with Line 237.

Line 251: transferring or extending?

Line 271: This sentence is repeated with Line 97?

Line 298-302: Different from the standard seasonal changes of NDVI for winter wheat with two peak values in the growing season, the seasonal changes of NDVI for winter wheat in HuB and SC showed increasing trend from October to May, which make it difficult to differentiate it from other crops. That maybe the reason for relatively lower identification accuracy. So, the identification of winter crops in warmer regions should be paid more attention.

Line 327: “condition” the same as Line 26.

Line 328-329: rewrite the sentence.

Line 337: check the style of References, especially the Capital/Lowercase of the words in the title.