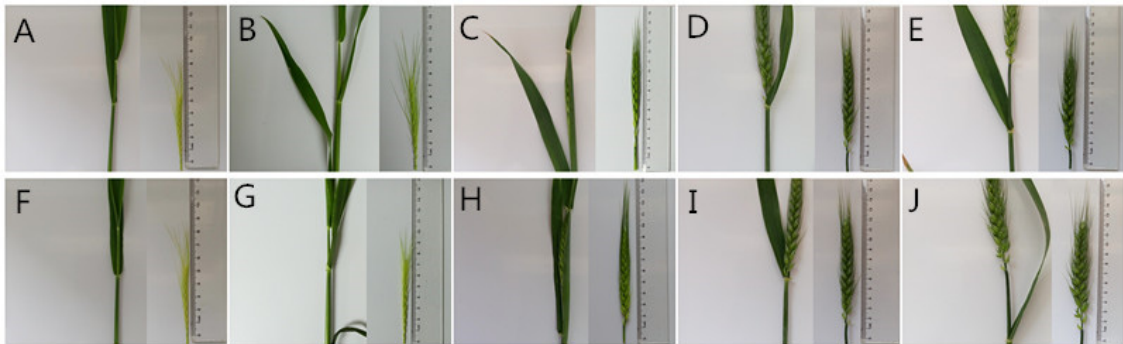




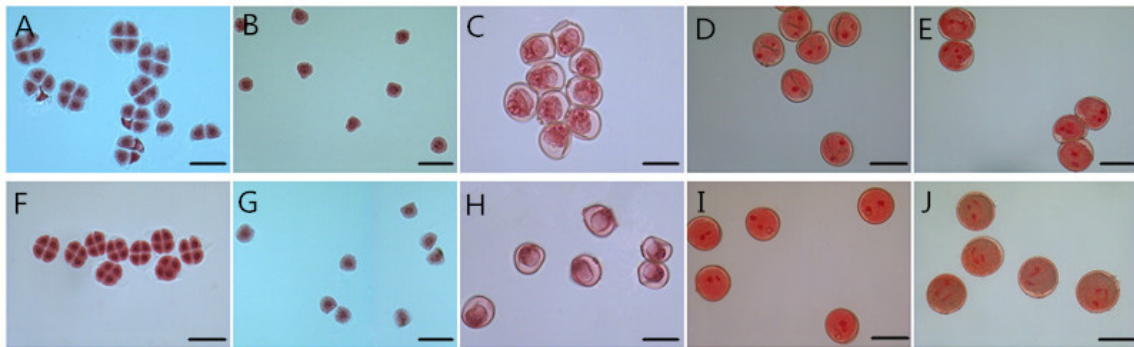
Supplemental Fig. 1. Remaining culms of the wheat plants from which the primary tillers and main stems were removed on May 4, 2008 at the spike fertility testing nursery.



Supplemental Fig. 2. Growing secondary tillers on plants from which the earlier tillers and main stems were cut at the spike fertility testing nursery during 2008.



Supplemental Fig. 3. External appearance of the development stages in the male sterile lines KTM3315A and K3315A growing in the field. A to E, K3315A. F to J, KTM3315A. A and F, Tetrad stage. B and G, Early uninucleate stage. C and H, Later uninucleate stage. D and I, Binucleate stage. E and J, Trinucleate stage.



Supplemental Fig. 4. Acetocarmine-stained cells showing the development of microspores in sterile (A to E) and fertile (F to J) wheat plants. A and F, Tetrad stage. B and G, Early uninucleate stage. C and H, Later uninucleate stage. D and I, Binucleate stage. E and J, Trinucleate stage. Scale bars are 50 μm in A to J.



Supplemental Fig. 5. Mixed seed production system (MSPS) for hybrid wheat (females and males planted in a mixture at a seed ratio of 6:1) in 2010, where the mean outcrossing frequency of the TCMS line was 68.03%.



Supplemental Fig. 6. Conventional seed production system (CSPS) for hybrid wheat (eight rows of the female and three rows of the male planted in alternate rows) in 2010, where the mean outcrossing frequency of the TCMS line was 36.17%.