Deciphering the environmental impact on spike architectural traits for grain yield consolidation in bread wheat (T. aestivum L.)	
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Abstract: The realization of grain yield in wheat is decided by source-sink balance under prevailing environmental conditions. Management conditions like changing the sowing time influence the source-sink capacity through modification in agronomic traits. Therefore, this experiment was conducted to decipher the influence of spike architectural traits (SATs) on grain yield and to open avenues for further grain yield enhancement. Comparatively early sowing over timely sowing gives the advantage of realizing higher grain yield with a positive relationship with SATs namely spike length, spikelets per spike, individual spike weight, individual grain weight, number of grains per spikelet, grain length, and grain width of upper and lower spike portion. Confirmatory factorial analysis revealed that spike length, spikelets per spike, individual spike weight, grains per spikelet were having a significant effect in deciding grain yield in early sown. The presence of a significant effect of genotype by environment interaction over grain yield and SATs allows the exploitation of available genotypic and environmental variability for further yield enhancement. GGE analysis on transformed and standardized grain yield-trait (GY-trait) combinations was used in the selection of genotypes having high GY-trait combinations for both sowing times. In early sowing, WG 11 was the best for high GY with high individual spike weight; grain length and grain width at lower and upper parts of the spike; and shorter days to 50% flowering. Genotypes exclusively having the high GY-trait combination along with low values of remaining GY-trait combinations were also selected with genotype focused GGE approach.