



Micro-climatic Variations in Maize (*Zea mays* L.) as Affected by Agronomic Interventions and their Relationship with Biological Parameters

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Abstract: The field experiments were conducted to study the microclimatic parameters as affected by the agronomic interventions in *kharif* and spring season maize at the Students' Research Farm, Punjab Agricultural University, Ludhiana during 2014-15 and 2015-16. Leaf area index (LAI) and photosynthetically active radiation (PAR) interception by the crop was significantly higher in minimum tillage than conventional tillage. Application of 75 % RDF + 25 % N through FYM plus mulch recorded significantly higher LAI, higher PAR interception and lower canopy temperature. Minimum tillage produced 5.1 and 5.9 per cent higher grain yield in *kharif* maize and 6.2 and 7.2 per cent higher grain yield in spring maize than conventional tillage. The 9.0 and 7.5 per cent higher yield in *kharif* maize and 4.9 and 6.7 per cent higher yield in spring maize were obtained with application 75 % RDF + 25 % N through FYM plus mulch over 100% RDF. Grain yield of *kharif* and spring maize was significantly correlated with dry matter production ($r=0.95$ and 0.97), plant height ($r=0.97$ and 0.96) and leaf area index ($r=0.92$ and 0.96).

Keywords: Canopy temperature, Fertilizers, Grain yield, Maize, Mulch, PARI, Spring Maize
