

The effects of temperature stress on the quality and yield of soya bean [(Glycine max L.) Merrill.]

Abstract

Reproductive development and growth by crops is especially important for human welfare because we depend on crop fruits and seeds, directly and indirectly, for most of our food. Seed production by crops depends on vegetative development and growth, development of pollen and egg, pollination, and fertilization. The final size of individual seeds generally hinges on cell division within the embryo, followed by seed filling and maturation process. Environmental conditions prior to the shift to reproductive development usually affect by influencing photosynthesis per unit of leaf area, canopy development and interception of solar radiation per unit of ground area, and initiation of potential fruiting site; a strong positive correlation between canopy photosynthesis per unit of ground area and seed number exists for most crops. For many crops where they are now grown, an increase of just a few °C significantly reduce yield. Dependence on soybeans for food and feed has increased rapidly in many countries during the last 30 years. Nutritionists believe that utilization of soybeans should continue to increase in order to provide better nourishment for people throughout the world. For this goal to be realize, present production areas must produce more soybeans and new production areas must be established.

Keyword: Global warming; Pollen; Seed; Quality; Yield; Temperature; Stress; Soybean