

Agriculture Seminars @ Canberra

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Date : Tuesday 1 March 2016

Venue: CSIRO Black Mountain Laboratories, Building 1 Lecture Theatre

Speaker: Frank Gubler, Chief Research Scientist, CSIRO Agriculture

Seminar: Environmental control of grain dormancy in cereals: effects of light and temperature

Abstract: Grain dormancy is an adaptive trait that imposes a temporal block on germination even under favourable conditions. However, many cereals such as wheat exhibit weak dormancy as a result of selection for rapid and uniform germination by breeders to synchronize crop production. This has left current cultivars of wheat prone to pre-harvest sprouting which can cause large economic losses. Grain dormancy is a strongly heritable trait that is induced by abscisic acid during the early stages of maturation, but its intensity at harvest and its maintenance afterwards can be modulated by environmental conditions experienced during grain maturation and subsequent grain storage. In my talk, I will discuss recent research investigating how light and temperature regulates dormancy maintenance and loss in wheat and barley.

About the Speaker: After completing a PhD in the lab of Professor Anne Ashford (UNSW) where I investigated protein secretion pathways in plants, I joined Professor Adrienne Hardham's group at RSBS ANU in 1986 to study the early stages of Phytophthora infection of plant cells. In 1990, I moved to CSIRO Plant Industry and joined the group of Dr Jake Jacobsen to study hormonal control of gene expression in cereal grains. Subsequently, this work was expanded to investigate molecular and hormonal mechanisms of dormancy in wheat and barley with the aim of identifying novel approaches to eliminate pre-harvest sprouting in wheat crops.