# Ecological Engineering: A New Approach for Agricultural Pest Management

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**Abstract—***The key challenges of worldwide agriculture are sustainability, conservation of natural resources, food security and safety. Infestation due to pests from sowing to maturity is one of the major biotic reasons for lower productivity in major cash crops. Uncertain whether condition due to climate change leads to outbreak of several pests and cause severe yield loss ranged from 50-60 per cent. At present farmers mostly depends on pesticides for pest management which would lead to hazardous effect of pesticides. Ecological engineering has recently emerged as a paradigm for considering pest management approaches that are based on cultural practices and informed by ecological knowledge rather than on high technology approaches such as synthetic pesticides and genetically engineered crops. The development of ecological engineering is explored ranging from a simple first approximation that diversity is beneficial, to contemporary understanding that diversity can have adverse effects on pest management. This requires that the functional mechanisms that lead components of biodiversity to suppress pest activity are better understood and exploited. Pest suppression via ecological engineering is placed in the broader context of 'ecosystem services' provided by farmland biodiversity including nitrogen fixation and the conservation of pollinator species and wildlife.*