MBG FOCUS TALK

hosted by Erik Østergaard Jensen

MBG Focus Talks in Molecular Biology

Monday 6 March at 14:00 - 15:00

Flakkebjerg, Auditorium (7613-C101)

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Genomics approaches to facilitate crop mutation breeding

The genetic improvement of crops is a crucial component of the efforts to address pressures on global food security and nutrition. It is estimated that food production should be at least doubled by the year 2050 in order to meet the needs of a continually growing population. The availability of heritable variation is a prerequisite for crop improvement. Where sufficient variation does not exist naturally, it can be created through either random or targeted processes. Inducing mutations remains a powerful and successful tool to improve crops. There are now over 3200 officially released mutant crop varieties that add billions of dollars to the global economy.

My research focuses on the development, adaptation and application of tools for improvement of seed and vegetatively propagated crops. In this seminar I will give examples of how we are using next generation sequencing for forward and reverse-genetics (TILLING) in crops such as banana, barley and tomato. I will also describe how pooled amplicon sequencing approaches can be used to mine novel and useful natural alleles in large germplasm collections of cassava and rye. In addition, I will present resent efforts to evaluate how methylation may be contributing to climatic adaption in barley.