**ASSESSMENT OF GENETIC PURITY OF MAIZE HYBRIDS ALONG THE MAIZE SEED VALUE CHAIN**

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**About your institution**
Makerere University is a public university located in Kampala, it is Uganda's largest and second oldest higher institution of learning. It comprises of various colleges like; Agricultural and Environmental Sciences, Business and Mgt Sci., Engineering, Design, Art and Tech, Health Sciences, Natural Sciences among others. Each of these colleges comprises of a number of schools.

**Objectives:**

**General Objective:** To contribute towards improving seed purity and varietal identity in the maize seed value chain.  

**Specific objectives:**
- To determine the level of phenotypic variability of commercial maize hybrids as they move from the research station to the farmer.  
- To determine the level of genotypic variability of commercial maize hybrids along the seed value chain by use of molecular markers.  
- To determine whether phenotypic offtypes are also identified as offtypes by molecular markers.

**Methods:**
Seeds will collected from the different sources i.e. research station, seed companies, agrodealers and farmers, these will be planted to determine how they vary. Variability will be determined both phenotypically and molecularly. For molecular variability, the plants will be raised for two weeks and DNA will then be extracted, and it will be subjected to Single Nucleotide Polymorphisms (SNPs) markers.

**Expected outputs from the project:**
- MSc. thesis  
- At least two publications  
- Determine the weak links in the maize seed value chain.  
- A clear well stated methodology to determine seed purity to be used by the major players in the seed value chain.

**Impact of the outputs on agriculture in Africa:**
From the research findings, the weak links in the maize seed value chain will be determined, this way counterfeit seeds on the market will be reduced so as to have as much production as expected and also to have the farmers not lose confidence in the formal seed system.

**What types of molecular biology equipment do you have at your labs?**
- PCR machine  
- Incubator  
- -80° C freezer  
- Centrifuge

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