

Introduction

Outline

1. Potato: The crop
 - i) Overview context of the crop
 - ii) Evolutionary history
 - iii) ethnobotany perspective
 - iv) Potato as a universal field crop
 - v) Genetics of potato
2. Breeding potato
 - i) Initial hobby breeding
 - ii) Development of potato breeding into 20th century
3. Lack of genetic improvement in Potato
 - i) Less progress in potato relative to other crops
 - ii) Replication in early generations
 - iii) GxE a major factor effecting evaluation
 - iv) Large selection surface
4. Potential answers for breeding potato
 - i) Breeding methods such as Line, ploidy reduction, or bridge breeding
 - ii) Technologies such as MAS, QTL mapping, genomic selection
5. Genomics driven Hybrid breeding
 - i) Conversion to hybrid breeding
 - ii) Siezing other tools and technologies used in hybrid breeding
 - iii) Utility of TPS based cropping systems and supply chains
6. What is needed for hybrid breeding
 - i) Self-compatible diploid populations
 - ii) Sufficient purging of deleterious mutations
 - iii) Phenotypic and genotypic data for large hybrid populations
7. Introducing chapters
 - i) Short summary of the following chapters