Background

The MS Plant Breeding (MS PLBR) program at Iowa State University (ISU) recognized the need to reshape the program for better delivery of courses to ensure connected progression from course to course, with the understanding that this would facilitate students mastery of concepts and development of the needed competencies to prepare them for the job market. Resequencing the courses in the program was deemed necessary and a first step toward that goal was to assemble what topics and subtopics were taught in the different causes of the program. Dr. Mahama led a collaborative project between PLBR faculty and the AGEDS department to identify the big picture topics and learning outcomes for graduated plant breeding education. The MS PLBR faculty continued with the project and worked in pairs based on similarity of concepts covered in the course(s) they instructed. The goal was to identify potential duplications as well as gabs, with the goal being to either keep concepts as they are if taught at different depths (and so are complementary and facilitate continuity in students understanding as they progressed through the courses), or modify concepts as needed. Applying the concepts and competencies identified enabled the MS PLBR Program to offer courses in a manner that better prepared students with prior knowledge to succeed from course to course.

Therefore, the core Concepts and Competencies displayed here are a direct reflection of the ISU MS PLBR program, as of 2018, and would likely differ some given revisions that were made in some courses. They could potentially contribute toward a broader initiative of a consensus set of core concepts and competencies for graduate plant breeding education nationally in the USA as well as internationally.

Educational materials that relate to these core concepts for six of the eight courses may be accessed using this link: [https://pbea.agron.iastate.edu/](https://urldefense.com/v3/__https%3A/pbea.agron.iastate.edu/__;!!DZ3fjg!_9B1qvxUK47N9QUStW6hKi7ndeRiVrjODkOS_vQgHDTlWVWQSdUr4APC57RKjWMnMVLhzMtephZ8v4G4XLIr$). In addition instructor guides for four of the courses may be obtained here: <https://pbea-wacci.ug.edu.gh/>.

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