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brandom: Randomization Application

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An Experimental Design refers to the arrangement of treatments in an experimental field. Making use of the appropriate design for an experiment ensures cost effective collection of data and provides an appropriate method for analysis leading to reliable conclusions and inferences. Moreover, measurements made on experimental units have to be accurate and precise. This can be achieved by considering the three principles of experimental designs, which are composed of Replication, Randomization and Error/Local Control. Experimental designs are evolving over time and we have to keep up with the needs of the breeders. To provide the breeders with an easy-to-use application, a Shiny Application, brandom, is being developed at IRRI. It is a free and an open-source application created using R and deployed in Shiny for easy access to breeders. It is an enhanced version of the Randomization module from the PBTools software. The current version implements nine experimental designs: (1)Randomized Complete Block Design, (2)Alpha Lattice Design, (3)Alpha Lattice Design - DiGGer, (4)Alpha Lattice Design with Repeated Checks, (5)Alpha Lattice Design with Diagonal Checks, (6)Row-Column Design, (7)Augmented Randomized Complete Block Design, (8)Augmented Randomized Complete Block Design with Diagonal Checks, and (9)Partially Replicated Design. In the future, other experimental designs will be added to handle sparse testing and other requests by breeders.