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Spencer O Sims* (spencer_sims01@yahoo.com), 210 C Holland Hall, 7000 Adventist BL NW, Huntsville, AL 35896, and **Amanda Fernandez, Qian Zhang, Tyesha Hall and Mikias Kidane.** *Mathematics of Sowing Games.* Preliminary report.

Mancala is an ancient popular “sowing” family of board games that originated in Africa and Asia. The board consists of a number of bins and a special bin called the Ruma. Initially a number of stones or seeds are placed in every bin except the Ruma. Sowing occurs when a player picks up stones in a particular bin and distributes them in adjacent bins. Sowing games have not been thoroughly studied, even though they are widespread. This presentation examines the mathematical structures present in single player sowing games like Tchoukaillon, Tchuka Ruma, and various modifications of these games. Computer simulation and proof are used to develop a theory to describe these games. We will analyze interesting patterns, uncover multiple ways to find a winning board, and examine how two different sets of moves can end in the same board state. (Received September 22, 2011)