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Neil A. McKay* (neilmckay@dal.ca). *Recognizing Values from Hackenbush Hotchpotch*. Preliminary report.

Hackenbush Hotchpotch is a combinatorial game played by two players (Left and Right) on a graph where edges are colored blue, red, or green and some vertices are identified as the ground. A move for Left is to remove a blue or green edge. A move for Right is to remove a red or green edge. After a move, any edge not connected to the ground is removed. The first player unable to move loses.

For every combinatorial game position, say G , there is a unique simplest position, called the canonical form that is equal to G under the Fundamental Equivalence. The canonical forms of Hackenbush Hotchpotch are well-understood if a position has no green edges or only green edges. Furthermore, there are efficient algorithms to take a Hackenbush tree or forest and find the canonical form.

Given a canonical form we do not know when there are Hackenbush positions which are equal. In particular, we ask which canonical forms are equal to some Hackenbush tree. We present a solution, based on ordinal sums, for identifying paths and extend those methods to some classes of Hackenbush forests. (Received August 18, 2014)