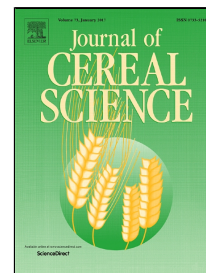


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Identification and Characterization of High Protein Oat Lines from a Mutagenised oat population



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Highlights

1. We screened seed protein content in more than one thousand lines in a mutagenized oat population made from an elite oat variety (SW Belinda) using an elemental particle analyzer and found 230 lines with a protein content of 15% or higher. The highest line had 24% protein.
2. We verified the stability of the high protein trait by re-measuring seed protein levels after propagating 30 high protein lines both in the green house and in the field for at least two consecutive years
3. By back crossing to Belinda we showed trait the high protein trait was genetically stable in all lines tested and that it was inherited in a Mendelian fashion.
4. By electrophoretic analysis of high protein lines we showed that in most cases the major increase was in globulin proteins
5. My measuring total dietary fiber, β glucan and lipid content in 15 high protein oat lines we showed that the levels of these macromolecules were similar to the non-mutated parent plant Belinda, i.e. these characters were not negatively affected by the high protein content.

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