

[Back](#)

Agricultural and Food Science - abstract



Vol. 13 (2004), No. 1-2, p. 29-38

PELTONEN-SAINIO, PIRJO, LEHTINEN, PEKKA, KONTTURI, MARKKU, RAJALA, ARI, KIRKKARI, ANNA-MAIJA,
Impact dehulling oat grain to improve quality of on-farm produced feed : 2.Groat breakage and storability

Keywords Avena sativa, fat, fatty acids, grain, groat, hulls, oat, rancidification, rotational speed,

Abstract

Dehulling improves markedly the feed value of oat (*Avena sativa* L.), but good storability of groat mass is required when large quantities of oat are dehulled at any one time. A laboratory model of an impact oat dehuller, similar to a commercial device, was used to study the effects of rotation speed and grain moisture content on groat breakage and the storage life of oat groats. Grain of oat cultivar Salo [from official variety trials, MTT Agrifood Research Finland, Jokioinen (60°49'N), 1996–2000] was dehulled with an impact oat dehuller using rotation speeds of 200 to 500 r min⁻¹ at 50 r min⁻¹ intervals. In an additional experiment, grains were moistened resulting in moisture content ranging from 10% to 18%. Proportion of broken groats and size distribution of groat particles were measured. Storability was determined through analysing the evolution of pentanal, hexanal and free fatty acid content after storing groats at 10, 20 and 30°C for two and five months. At higher rotation speeds more broken groats resulted, but dehulling did not cause any marked rancidification of the groats. Thus, impact dehulling is a practical method to increase the energy content of oat grains on-farm without such problems as groat breakage induced oxidation of fatty acids.

Contact pirjo.peltonen-sainio@mtt.fi

[\[Full text\]](#) (PDF 133 kt)

Update 16.6.2004.

Source: MTT's Publications database [Afsf](#)