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A Thesis

MAINTAINING QUALITY OF BARLEY

THE EFFECT OF VARIETY AND ENVIRONMENT ON THE

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The purpose and operation of the milking laboratory, University of Manitoba, is described. A typical investigation is discussed in detail and it is shown that barley varieties differ markedly in milking quality. The environment under which the barley is grown also affects milking quality, and the varieties do not respond equally to changes in environment. The investigations that have been carried out in the last two years are summarized as comparisons of varieties with 0.4 C.21 with respect to milking quality. Milking data for twenty varieties grown in Canada are presented and the varieties are divided into four groups -- six-rowed varieties admitted to milking grades; rough-awned, six-rowed varieties not admitted to milking grades; smooth-awned, six-rowed varieties admitted to milking grades; and two-rowed varieties. Of the varieties admitted to the milking grades only two, Kenawy and Kenawy 041.60, are considered equal to 0.4 C.21 in milking quality. The other two varieties in this group, Garton and Redland, appear less suitable for milking than 0.4 C.21 as they tend to produce higher nitrogen contents and lower extract yields than it. The second group contains six varieties, O111, Redland, Rio, Fontino, Bester, and Trebl. O111 has some favorable qualities in that it produces higher extract yields and higher diastatic power than 0.4 C.21, but some