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INFLUENCE OF NITROGEN FERTILISATION AND AUTUMN MOWING ON DUAL USE OF *THINOPYRUM INTERMEDIUM*.

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The double production grain-forage of *Thinopyrum intermedium* (Host) Barkworth & D.R. Dewey for several years could be of major interest for crop diversification and environmental improvement of the highly productive agroecosystems in Belgium. Indeed, the perennality of the species could be a way to combine sustainability and agricultural productions. Grain production of *Th. intermedium* is limited compared to annual cereals, but can be offset by its above-ground biomass production used as forage. As the crop has never been implanted in our regions, characterizing its potential is crucial. The aim of this research is to optimize the dual use of the crop by studying different agronomic levers such as nitrogen fertilisation and autumn mowing. Our results show that the nitrogen fertilisation is very useful in the establishment year, but does not seem significant the subsequent years. During first year, N fertilization has increased grain yield from 0,8 to 1,5 tons/ha and aerial biomass production from 4,3 to 10,6 tons/ha of DM with a fertilisation of 100 kgN/ha applied before stem elongation (BBCH 30). The aestival grain productions can furthermore be combined with post-harvest biomass regrowth that can be mowed in autumn. This regrowth represented roughly 1,3tons/ha of DM during the first year. Although decreasing the amount of total above-ground biomass the following season, this mowing allows to valorise an aerial biomass of good feed values. This cut could also have a positive effect when the nitrogen fertilisation is high by reducing intraspecific competition. These results must be confirmed in the coming years, but they constitute a first understanding of field management to optimize dual production which must be coordinated with grain production objectives.

Keywords : *Thinopyrum intermedium*, perennial grains, nitrogen, mowing