

Elevated intake of high amylose wheat improves conception rates and increases placental size but not fetal weight in mice

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INTRODUCTION



- A novel type of wheat
- Contains higher amounts of amylose, resistant starch and nutrients¹
- Lower in glycemic index¹
- Effect on reproductive parameters is unclear

Aim: To determine the effects of consuming a diet rich in HAW on pregnancy outcomes in female mice

Method

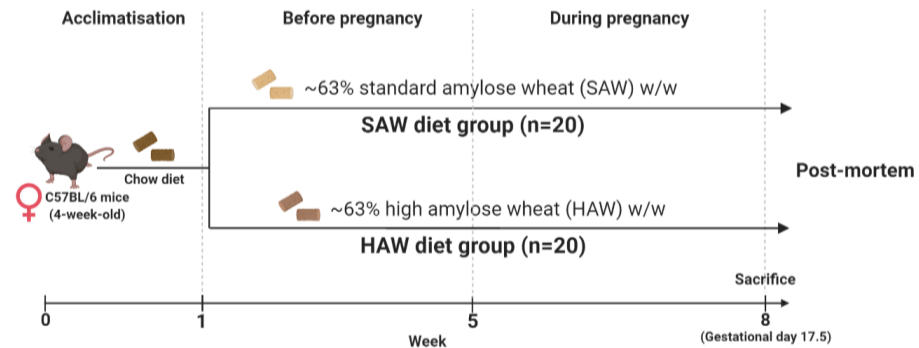


Figure 1: Female C57BL/6 mice (n = 20/group) were fed diets containing either ~63% (w/w) HAW or ~63% (w/w) standard amylose wheat (SAW) for 4 weeks prior to mating until gestational day 17.5, at which time pregnancy outcomes were assessed

RESULTS

Figure 2: 64% SAW vs 94% HAW mice achieved pregnancy post-coitus

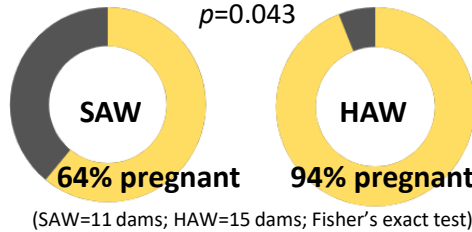


Figure 3: Male:female fetuses ratio was higher in HAW vs SAW group

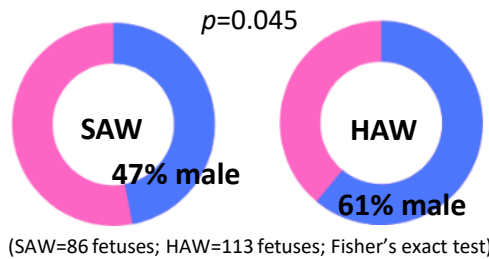
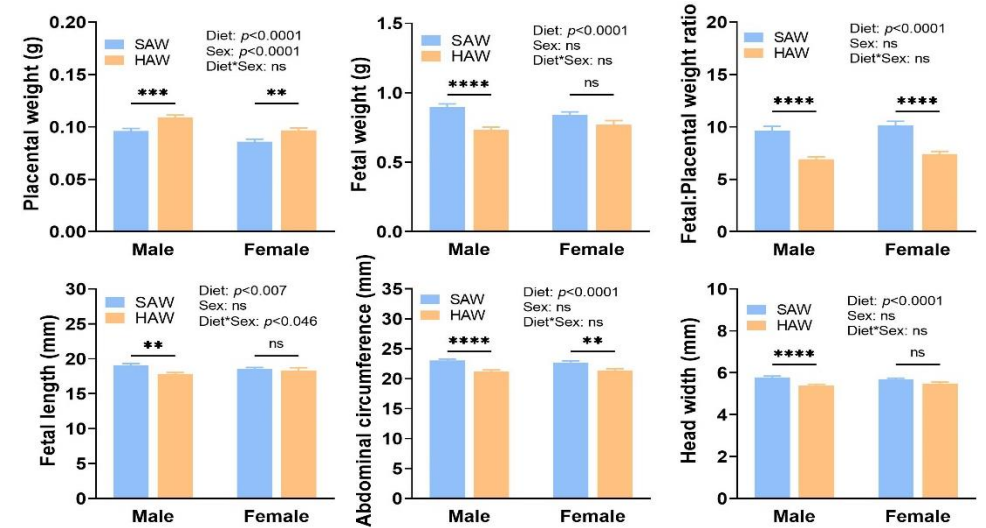


Figure 4: Fetuses in HAW dams had a heavier placental weight but a lower body weight and a smaller body size compared to fetuses in SAW dams



Data are mean±SEM (SAW=11 dams and 86 viable fetuses; HAW=15 dams and 113 viable fetuses). ** $p<0.01$, *** $p<0.001$, **** $p<0.0001$, Bonferroni multiple comparisons test. ns: not significant

CONCLUSION

- Elevated intake of HAW in female mice before and during pregnancy improved conception rates and increased the proportion of male and was associated with larger placentas but not fetal growth
- Further studies are required to investigate the short- and long-term impacts of maternal HAW consumption on the offspring