Chasteberry (*Vitex agnus castus*) as an alternative to synthetic progestogens? Composition of the fruits and effects on male and female pigs.

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Introduction

Mounting behaviour of uncastrated male pigs may lead to injuries and affect their welfare.

Synthetic progestogens are widely used in pig farms for estrus synchronization in gilts, but they may contaminate the environment.

We evaluated if chasteberry (*Vitex agnus castus*), a shrub from Mediterranean areas, could reduce uncastrated boar sexual behavior and could be a natural substitute to synthetic hormones for gilts.

Our objective was to analyse 1) the composition of chasteberry fruits, 2) their effect on sexual behaviour and plasma testosterone concentrations in boars, 3) their effect on estrus synchronization and plasma progesterone concentrations in gilts.

1) Composition of chasteberry fruits

Chasteberry fruits were analysed using high performance liquid chromatography and gas chromatography coupled to tandem mass spectrometry.

→ fruits contain flavonoids: 88µg/g apigenin, 34µg/g kaempferol

phytosterols: 500µg/g β-sitosterol, 79µg/g stigmasterol, 31µg/g campesterol, 5µg/g cholesterol

steroids: 208ng/g 3α-dihydroprogesterone, 6ng/g pregnenolone, 3ng/g progesterone, 3ng/g 5α-dihydroprogesterone

2) Effect of chasteberry fruits on boar sexual behaviour and plasma testosterone concentrations

Two replicates were conducted with 2 groups of 24 uncastrated boars fed with 10 g vs 0 g per day of chasteberry fruit powder for 1 to 2 months, starting at 115 to 124 days of age.

→ Plasma testosterone concentrations were lower in the chasteberry (2.27 ± 0.3 ng/ml) compared to the control group (3.55 ± 0.59 ng/ml) ($P < 0.05$).

→ The number of mounting behaviours was lower in chasteberry group compared to control group in the first replicate ($P < 0.01$), but not in the second replicate.

3) Effect of chasteberry fruits on synchronization of gilts estrus and plasma progesterone concentrations

Gilts were fed twice a day with 300 g of chasteberry fruit powder (n = 12) or 0 g (n = 6) or a synthetic progestogen (n = 6) for 7 days starting 12 days after estrus.

→ Plasma concentrations of progesterone were not different between groups.

→ Analysis of the inter-estrus interval is in progress.

Conclusion

Chasteberry fruits contain compounds with progestogen activity.

Their consumption decreases uncastrated boar libido in one replicate and plasma testosterone concentrations.

Their consumption has no effect on gilts plasma progesterone concentrations.

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