

COST EFFICIENT ASSIGNMENT PANEL FOR DUCKS

Summary: This study extracted a panel of 96 SNPs that are efficient for parentage assignment in duck farming, where Pekin and Muscovy lines are crossed. The use of low-cost SNPs for parentage would be highly valuable in the case where the European Union banned the use of cages in poultry.

While I found the manuscript a little bit confusing at times (I would have described the factorial design before the SNP selection, lots of different numbers), the results of this research could be very useful in the future.

- **Title and abstract**
 - Does the title clearly reflect the content of the article? [] Yes, [] No (please explain), [] I don't know
 - Does the abstract present the main findings of the study? [] Yes, [] No (please explain), [] I don't know
- **Introduction**
 - Are the research questions/hypotheses/predictions clearly presented? [] Yes, [] No (please explain), [] I don't know
 - Does the introduction build on relevant research in the field? [] Yes, [] No (please explain), [] I don't know

Could you add some information about KASpar here. If not, I am not sure why you are privileging this technology over Axiom, which has been used for the 600K? Why makes it low cost? What are the advantages?

- **Materials and methods**
 - Are the methods and analyses sufficiently detailed to allow replication by other researchers? [] Yes, [] No (please explain), [] I don't know

L73: What is your reasoning behind using 96 SNPs (why not 100?)

L78: I don't understand where the "only 15% originated from same populations a parental lines". In line 72-73, you described the experimental lines as *Cairina moschata* and *Anas platyrhynchos* which are the same as the ones from the 600K.

L81: What makes a SNP eligible for the "chosen technology" (I guess Kaspar)?

L82: "the first set" you have not describe what you mean by set prior to this sentence.

L97: If only the SNPs with identical primers in both populations were kept, the number of remaining SNPs in each populations shouldn't be the same? (i.e. the intersection of the SNPs list between the 2 pop?). Confusingly, you are talking about the intersection of the 2 SNP list in the next sentence with yet another number 399.

L115: where do these parents come from? Have they been genotyped prior the experiment? With Axiom? They cannot be from the reference dataset as you mention only 79 Muscovy for that one?

L154: In the factorial mating that you are proposing, the males were kept in individual cages. Will this design possible if the ban on cages in enforced?

L160: Please explain your reasoning here

L162: Do you mean that you are avoiding to put sibs in the same group as their genotype may be too similar and the parentage assignment software may not be able to distinguish between them? If so, rephrase for better understanding

L184: I am a bit confused with the number here. In you mating design you use 96 +48 (144) Muscovy and 99 + 40 Pekin (139). Why do you genotype 157 Muscovy and 273 Pekin? The number of mules is only 207? Where these individuals already genotyped? With what technology?

- Are the methods and statistical analyses appropriate and well described? [] Yes, [] No (please explain), [] I don't know

I found the M&M a bit confusing when it comes to the numbers, which would be resolved by addressing the comment

- **Results**

- In the case of negative results, is there a statistical power analysis (or an adequate Bayesian analysis or equivalence testing)? [] Yes, [] No (please explain), [] I don't know **Not Applicable**
- Are the results described and interpreted correctly? [] Yes, [] No (please explain), [] I don't know

L209: Table 1. Any explanation as to why the minimum call-rate for Muscovy is so low (0.258) while minimum call rate for Pekin is 0.94?

L264: What happened to theses 16 missing parental genotype? Where they genotyped but discarded because of poor quality or were they never genotyped? If not genotyped, why?

- **Discussion**

- Have the authors appropriately emphasized the strengths and limitations of their study/theory/methods/argument? [] Yes, [] No (please explain), [] I don't know
- Are the conclusions adequately supported by the results (without overstating the implications of the findings)? [] Yes, [] No (please explain), [] I don't know

