Effects of housing and management systems on growth, immunity, antioxidation and related physiological and biochemical indicators of donkeys in cold weather

General Comments

This article is of interest and the researchers did a thorough job in experimental design, measuring production traits, endocrine, and immunological parameters. Behavioral data would have completed the study, but even without it, they present significant data to aid livestock producers. The Abstract could have more information on the experimental design. For example if the authors state that they organized the data into 2 periods (d 1-21, 22-42) and collected data at 2 times (0700 and 1400 hours) the reader would have better context when reading the results (presented in the abstract). The reader has to refer to the materials and methods to understand the abstract. The authors should strive to write more concisely and condense the text when appropriate. For example, state that ADG etc. was decreased during all periods rather than listing each period along with P values. Figures are well done and easy to follow. Authors could make the tables (1-7) easier to follow if they used light shading on the columns corresponding with 'no wind' vs. 'windproof' since that is the reason for improved performance and differences in biochemical and endocrine markers. The formatting on many of the tables need revised. It may be beneficial to provide the units on a separate line underneath the parameter rather than letting the table format divide the unit designations at odd places.

Specific Comments

Abstract and Introduction

Line 14	Delete 'the'
Line 17	Authors could just state that this was a 2 x 2 factorial experiment (which would lay the foundation for readers to understand the basic experimental design
Line 18	reword sentence, the word 'adopting' is confusing; perhaps say 'donkeys in different housing and management systems in cold weather
Lines 12-20	Is there a way to abbreviate or define the 4 groups easily, rather than writing out windproof, cold water etc. The those designations could be used throughout the paper.
	Ex. WB-C, WB-W, NB-C, NB-W ??? (suggestion)
Lines 24-25	Since ADG, ADFI and F:G ratio were affected at all 3 time periods and at the same significance level, then condense the sentence and just say at all time periods.
Line 25	Delete 'With', change to…..Windproof increased the digestibility….
Line 35 & 37	Change content to concentration
Lines 52-53	Change to…playing a key role in the agriculture sectors in developing countries.
	They serve as….

Line 61-62 Reword. If you aren't going to say 'many factors', you need to list more than 1. Simply say, Environmental factors can affect the physiological metabolism of animals.

Line 63 Delete among them (doesn't add to the meaning)

Line 67 Delete, 'as we all know'…..

Line 78 Change to, 'Cold stress can increase endogenous reactive ….

Line 88 delete , 'and more'

Line 89-91 Condense. Relative humidity is by definition the amount of moisture in the air, so no need to state it; Change to read ….'the intensity and duration of solar radiation (and delete number of sunny and cloudy days.

Line 97 What do the authors mean by 'select system configuration'?

Materials and Methods

Lines 105-109 The authors could easily explain the overall design as a 2 x 2 factorial

Line 109 Change to: 4 equal treatment groups (and delete with 6 head per group)

Line 110 Describe bell tower type, as this is not a universal architectural design

Line 113 State the height of the partial or half wall; change right and left to either north/south or east/ west (whichever is appropriate).

Line 114 How heavy was the PVC film??

Line 117 Define cold and lukewarm as soon as you mention them cold water (0-5 degrees C)….

Line 132 Type and supplier of scale??

Line 137 Change till to until

Line 140 No need to state 'following the routine…', just say as described (reference); provide a reference for AOAC (2004)

Line 158 No need to restate duration of experiment (42 days), it has already been stated.

Lines 165-172 It appears that most of the samples were analyzed using donkey specific ELISA kits from Ruixin Biological Technology), so why have 2 sentences?? Simply list all them in 1 sentence with 1 reference to supplier.

Line 179 2 x 2 two ?? confusing; Simply state that you tested main effects of wind and water temperature and their interactions.

Line 215 If parameters were affected at all periods, why state each separately??

Line 222 Table 1: You provide weights in g/d. Was your scale (for donkey) really accurate to 0.1 g? If not, round and state ADG in kg

Line 250	Table 3: Add a hard return and put (C^o) underneath temperature (rather than splitting it with a /
Line 264	Table 4 -7 need reformatting. Put units under the parameter to avoid splitting (/)
Line 288	What do you mean by change trend??
Line 310	Authors are suggesting that reference [18] refers to donkeys as they specifically state, 'may be harmful to donkeys', yet the provided reference was done in chickens. Are there any references for this for equids??
Line 320	No need to state through a feeding experiment with sheep, simply state Graham et al results; suggest you state temperature 10 vs. 25 degrees.
Line 345	Sjodin et al. 1990 refers to short distance running in man. Is this the best reference for citing oxygen consumption in cold stressed animals??
Lines 413-414	Change to: T4 is the main secretion of the thyroid gland while most of T3 is transformed….(again, avoid long, rambling sentences that add little to the context of the article).
Line 417-418	There are limited studies on equids / cold stress; authors may want to cite McBride et al. 1985.
Lines 496-500	Sentence is long and rambling; reword for clarity. Rather than saying lukewarm water, why not say that the temperature of drinking water had no effect on …..