

## Performance Profiling at the Biltmore Challenge endurance ride

### What you get:

- Generic presentation on 'how to interpret your results' information at ride,
- Individual results emailed (intent: within 2 weeks), covering blood analysis, electronic dehydration analysis, weight change correlations, progressive recovers and Profile of Mood States
- APEX consultant to help interpret individual results as required, and
- group APEX conference call with those involved about a month after the event to go over summary results.

Fringe benefit: this is a research project, so advancing the overall knowledge base, too.

Costs, for APEX member is \$75 / horse. For non-APEX members, \$100 for first horse, which includes APEX associate membership, and \$75 for each additional horse. Note: This is a very small fraction of the actual costs being subsidized by Abaxis and University of Guelph / VacuMed.

### What is involved, somewhat in order of how it will occur:

1. Blood draws,
2. weighings of horse,
3. very short questions at each blood draw,
4. electronic dehydration analysis, and
5. two progressive recovery pulse checks at the two intra-ride blood draw checks.

1. Blood draws: Abaxis is providing 6 blood draws, independent of distance, *after* any applicable vet exam.

- For the 50 milers, it will be pre-ride (after pre-ride vetting), both vet checks, post-completion trot, 2 hours post, and between 7:30am and 8 am Sunday.
- For the 75 milers, it will be pre-ride (after pre-ride vetting), first vet check, mid-point (which is the second) vet check, post-completion trot, 2 hours post, and between 7:30am and 8 am Sunday.

- For the 100 milers, it will be pre-ride (after pre-ride vetting), first vet check, mid-point (which is the third) vet check, post-completion trot, 2 hours post, and between 7:30am and 8 am Sunday.

Blood draws will be done just outside the arena at the blood draw tents you will see on the site plan. One stick, 3 tubes per draw. Note: completion could be a pull or withdrawal of any sort in this context.

2. Weighings of the horse: at each of the six blood draws, en route from the exit from the vet to the blood tents. You can certainly weigh your horse at all the check points, too!

3. Short questions: Ken Marcella has found research that says that questions addressing a "Profile of Mood States (POMS)" has a 72% predictive value for equine

performance. While the classic POMS has more questions, we have adapted the concept and want to see how it works (or does not). The questions are simple (attached is the form we will be using), no more than 4 at a time, with quick ratings on a scale of 1 to 5 (worrisome to superb).

4. Electronic dehydration analysis: This is rather cool. Mike Lindinger of Guelph will be bringing Vacu-Med body condition analyzers (BAI units) to the ride. This device does a non-invasive measurement of several variables, including dehydration. (Note: While this will be a component of the performance profiling, it will also be made available pre- and post- ride to ALL horses.) These measurements will be done in the vicinity of the blood tents for pre- and post-ride. At the check points, Mike's folks will track your horse(s) down and do them within the crewing spots while they are eating / drinking about 10 minutes before your hold is up. Mike may also be asking about electrolyte protocols you are following.

5. Progressive recovery pulses: at the two mid-ride checks at the crew points, 10 minutes prior to leaving, Mike's folks will also check pulses while they are doing the dehydration analysis.

For the blood analyses, these variables are measured:

ALB, ALP, AST, BUN, CA, CK, GGT, GLOB\*, MG, PHOS, TP, Fibrinogen, Hct, Hgb, Na, K, Cl, pH, PCO<sub>2</sub>, HCO<sub>3</sub>, TCO<sub>2</sub>,

Base Excess, PO<sub>2</sub>, sO<sub>2</sub>, and Lactate, 5-part CBC

For the BAI analyses, these variables are measured:

Predicted body mass (BM), body water (BW), % BW/BM, extra-cellular fluid volume (ECFV), % ECFV/BW, intra-cellular fluid volume (ICFV), %ICFV/BW, plasma volume (PV), PV/ECFV, body fat, dehydration index.

We will ultimately also bring some rider card information into the overall picture (speed, recovery time, pulse, CRI, for example).

On Sunday morning, around 8am at the main tent, there will be a brief briefing of all PP participants of what the general analysis will mean / show with a handout (not individualized). Originally, before we realized the extent of the analysis, we had hoped to be able to get individual results to participants Sunday morning, but we realized when we put out the extent of the analysis, that to do individual results in a quality fashion will require a bit more time. Thus, we plan on emailing the results to participants within a short while (right now tbd, but I hope less than two weeks) post-ride. Participants will be given the opportunity to go over the individual results with an assigned, qualified, APEX consultant personally. And we will have conference calls to look at the full key learnings across all participants and the Guelph, and we hope Abaxis, folks. APEX members will also receive the results of the analysis that will be done on the data post ride. Right now we anticipate based on discussions with Mike Lindinger that should be publishable results.