

We question if there is sufficient time for conducting hydrolysis procedures such as may be needed for apomorphine and other drugs in urine and for a separate extraction at low pH as is desirable for drugs such as Lasix and Motrin.*

4) The full value of gas chromatography cannot be utilized in the time available, because of the limit imposed by time and selection of conditions.

5) Urine samples generally contain much higher concentrations of drug, perhaps a thousand times more, than do blood samples.

6) Our 48 hour testing period permits full utilization of the urine sample, time for 3 to 5 screening or identification tests if needed, and the use of gas chromatography,

mass spectrometry if desired.

7) I also regard the Post Race urine testing as conducted by the Pre-Race Laboratories that I know of, as inadequate and no substitute for a proper Post Race Urine Test because they use an inadequate sample such as 2 ml to 30 ml and because they screen with only 1 or 2 test procedures.

These pressures and trends brought on by too much racing will, I fear, eventually destroy the good that has been accomplished in the last 30 odd years on preventing the drugging of horses.

Data on drug recovery from administration experiments to horses of four new analgesics is available from the author on request.

DISCUSSION

HAYWOOD: We sometimes encounter positive polyethylene glycol tests and whilst we do not encounter other substances, it is presumed that the glycol is used as a vehicle. We have a security system whereby an inspector will do a follow up at the stable and as a result of these enquiries they often come up with things like vitamin K, vitamin B₁₂ and other medicaments said to be useful in this context. Do you find this in the United States or does the permitted use of Lasix prevent use of these vitamins?

JAGGARD: Vitamins used to be used but do not show up on our procedure.

SMITH: Do you imply that the use of Lasix covers up another drug by speeding its rate of clearance?

JAGGARD: Lasix is a powerful diuretic and a horse may urinate 3 to 4 times on the racetrack before you get the official sample. Whatever drug is in the urine is expelled and lost.

BLAKE: I should like to make the point that at the University of Kentucky we are using the same techniques in our laboratory as is being used by the pre-race testing laboratories. We are finding 1 drug every 145 samples and 1 permitted drug every 1.66 samples and I think these techniques are very valid even under pre-race testing.

CHAIRMAN: I would attempt to crystallise what appears to be a difference here in two opinions. Would Blake accept the facts of what Jaggard has said that pre-race tests cover, say two dozen drugs but that the procedure used varies from time to time and each procedure in itself will not cover this number of drugs?

BLAKE: To a limited extent, it depends on the time available. One state has only 30 minutes, two others have 1.5 hours.

MAYNARD: We did a fairly complete feasibility study in Canada in 1971/72 and advised that the coverage of drugs at that time was completely inadequate for the costs involved. However techniques have improved and the Department of Agriculture has asked us to do another study. Three chemists plus myself will visit the pre-race laboratories in Ohio and New York to study in detail exactly what they are doing, and the degree of coverage they achieve. We will then do a laboratory study of sensitivities with the newer techniques such as GC using a nitrogen detector, and the feasibility of confirmation of any drug detected by GC/MS. This report will be handed to the Canadian Government and will be made available sometime in January 1977.

CLARKE: If you gave a large injection of thiamine would it interfere with the subsequent analysis?

JAGGARD: It does in our procedure because we use UV absorption as our first screen. You can feed as much as you want orally and it does not effect the procedure but if you inject, for instance, 1 gram of thiamine then you get some conjugate and UV obstruction which would prevent that particular screening test from being of any value in detecting a drug.