



# Fair Competition and Drug Control

Speaker:

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# PROHIBITED SUBSTANCES

an update.

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# PROHIBITED SUBSTANCES

- **Article 6 : BIOLOGICAL INTEGRITY OF HORSES.**
  - 6A PROHIBITED SUBSTANCES
  - 6B GENETIC AND CELLULAR MANIPULATIONS
  - 6C PROHIBITED PRATICES
  - 6D MEDICATION IN TRAINING
  - 6E OUT OF COMPETITION TESTING



# FEED CONTAMINANTS





# FEED CONTAMINANTS

- Article 6A clause 18
- The problem of feed contaminants



# Modification to Article 6, Clause 18

- Control the detection of certain environmental substances through the application of internationally harmonised residue limits which have been recommended by the IFHA's Advisory Council on Equine Prohibited Substances and Practices and selectively adopted by the relevant signatory countries.
- This allows for the control of certain substances by through the application of Internationally agreed residue limits.
- This approach was proposed to all AORC and IGSRV members and a list of possible substances was circulated for comment. Overall the approach was well accepted and work is in progress to establish International Residue Limits.





# MOST FREQUENT CONTAMINANTS

## Major

- Caffeine
- Theobromine
- Theophylline
- Atropine
- Scopolamine (Hyoscine)
- Morphine
- Bufotenine
- DMT (precursor of Bufotenine)



## XANTHINES

## • Minor

- hordenine, camphor, menthol...



# HARMONISED SCREENING LIMITS IN URINE PROPOSAL

	FEED CONTAMINANTS		
	CAFFEINE		
	THEOBROMINE		
	THEOPHYLLINE		
	ATROPINE		
	SCOPOLAMINE		
	MORPHINE (as glucuronide)		
	BUFOTENINE		
	DMT		
	HORDENINE		





# Gene doping

- ARTICLE 6 B
- **GENETIC AND CELLULAR MANIPULATIONS**
  - Subcommittee on genetic integrity of thoroughbreds;
    - First meeting in Paris the 8<sup>th</sup> of January



# Gene doping

- Terms of reference
- The group is a subcommittee of the Advisory Council on prohibited Substances and Practices.
- The SC provides recommendations on standards of testing and research in the field of genetic and cellular manipulations.
- The SC stimulates and coordinates relevant research and development in the laboratories of member countries of the Federation.
- The SC liaises with both chairmen of the Advisory Council and of the Welfare committee.
- The SC reports to the Advisory Council on PS and to ISBC.
- The major goal of the subcommittee is to investigate on risks associated with gene manipulation as well as cellular manipulation (cloning and breeding) and to provide advice on developments in genetic manipulation which have potential adverse welfare implication for horses.
- To provide an annual report to the IFHA October ExCo meeting summarizing its activities in the preceding year.



# Gene doping

## SCOPE OF ACTIVITY:

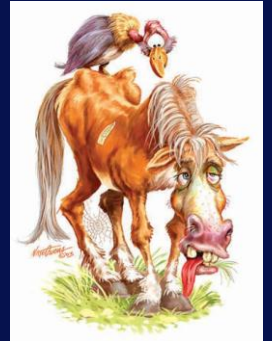
- Genetic integrity
- Alteration and modification of heritable genome
- Introduction of new genetic material.
- Genetic activity
- New strategies to alter gene expression
- Small interfering RNAs and micro RNAs
- Substances and techniques to affect Epigenetic mechanisms
- Cellular therapy
- Introduction of genetic manipulated cells.



# DOPING AGENTS

- Over the past decades we have focused our effort on control of medications. It appears now URGENT to come back to our first and most important goal : the detection of

## DOPING AGENTS !





# DOPING AGENTS

- What are these drugs?
  - WADA code definition

4.2.1 Prohibited Substances and Prohibited Methods. The Prohibited List shall identify those Prohibited Substances and Prohibited Methods which are prohibited as **doping** at all times (both In-Competition and Out-of-Competition) because of **their potential to enhance performance in** future Competitions or their masking potential and those substances and methods which are prohibited In-Competition only



# DOPING AGENTS

DRUGS LISTED IN THE ARTICLE 6 E  
(out of competition testing) :

- 4.2 *Anabolic agents*
  - (a) anabolic androgenic steroids,
  - (b) other anabolic agents, including but not limited to selective androgen receptor modulators (SARMs),
  - (c) beta-2 agonists, unless the substance is prescribed by a veterinarian as a bronchodilator at the appropriate dose.



# DOPING AGENTS

## 4.3 *Peptide hormones, growth factors and related substances*

- (a) erythropoiesis-stimulating agents, including but not limited to erythropoietin (EPO), epoetin alfa, epoetin beta, darbepoetin alfa, and methoxy polyethylene glycol-epoetin beta, peginesatide, hypoxia inducible factor (HIF)-1 stabilisers,
- (b) growth hormones and growth hormone releasing factors, insulin-like growth factor-1 (IGF-1), and other growth factors,
- (c) synthetic proteins and peptides and synthetic analogues of endogenous proteins and peptides not registered for medical or veterinary use,



# DOPING AGENTS

## 4.4 *Hormones and metabolic modulators*

- (a) aromatase inhibitors,
- (b) selective estrogen receptor modulators (SERMS) and other anti-estrogenic substances,
- (c) agents modifying myostatin function, including but not limited to myostatin inhibitors,
- (d) insulins
- (e) peroxisome proliferator activated receptor  $\delta$  (PPAR $\delta$ ) agonists, including but not limited to GW 1516,
- (f) AMPK activators, including but not limited to AICAR (5-aminoimidazole-4-carboxamide-1- $\beta$ -D-ribofuranoside)





# DOPING AGENTS

How can we conduct the fight against these major threats ?

- At the Racing Authority level
- At the Laboratory level



# DOPING AGENTS

## RACING AUTHORITIES

Adopt a comprehensive control programme driven by local racing authorities (following IFHA guidelines) and amend their racing rules accordingly:

- Sampling programme, in and out of competition and at **any time**.
- Collect any relevant matrices: urine, blood, hairs...
- Provide adequate funding



# DOPING AGENTS

## LABORATORIES

As these drugs are banned at any time :

- Control at zero tolerance level or through any scientific indicator of administration.
  - improve detecting capabilities on any of relevant matrices and if necessary develop new analytical lines in order to detect these molecules at the lowest possible level.



# IFHA PROGRAMME

- The IFHA will collaborate with National Racing Authorities, the Association of Official Racing Chemists (AORC) , the International Group of Racing Veterinary Surgeons (IGRSV) and drug control Laboratories under the supervision of the Advisory Council on Prohibited Substances and Practices to implement a comprehensive programme focused on these specific drugs.



# IFHA PROGRAMME

- The Chairman Mr Louis Romanet will explain the programme in details later.

**Thank you.**

