



HARMONISATION OF X-RAYS

Defining a COMMON PROTOCOL
for
NUMBER & PROJECTION
of X-Rays

-
-
-

Determining SEPARATE CATEGORIES

- NUMBER of categories
- DESCRIPTION of categories

-
-
-
-

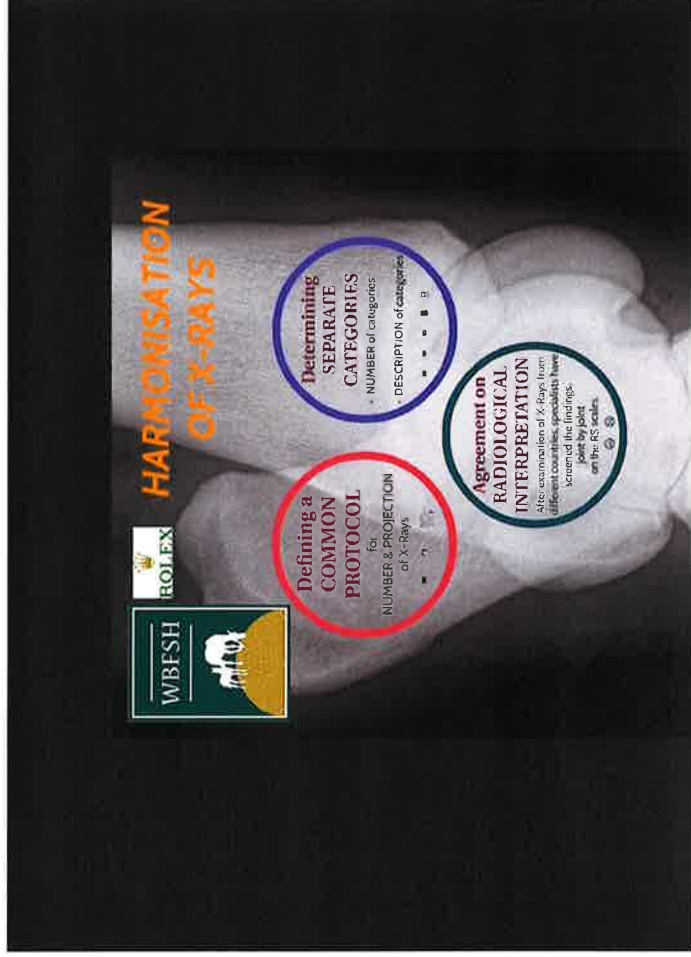
Agreement on RADIOLOGICAL INTERPRETATION

After examination of X-Rays from different countries, specialists have screened the findings, joint by joint on the RS scales.

- ☺
- ☺
- ☺



INTRODUCTION:
There is a growing need
for the harmonisation
of X-Rays



Defining a COMMON PROTOCOL for NUMBER & PROJECTION of X-Rays

EQUUS 423
 EQUINE PRACTICE
 EQUINE MANAGEMENT
 EQUINE NUTRITION
 EQUINE REPRODUCTION
 EQUINE SURGERY
 EQUINE TRAINING
 EQUINE WOUND CARE
 EQUINE ZOOLOGICAL ANATOMY



- The minimum protocol = Dicom with identification
- 2 Front feet: DP 55° + LM
 - the complete foot with all soft tissues
 - 55° to avoid surimpression with DIPJ
 - LM must be done on standing position on a flat block to see the sole (uni or bilateral WB)
- Front fetlocks must be imaged, at least, on LM focused on the foot
- 2 hind digits: from foot to fetlock
 - PIPJ must be imaged
- 2 Hocks: LM (15°) + DP (25°)
 - (+ prox. metatarsus I)
- 2 Stifles: LM slightly Cd-Lat. Obl

	Belgium	Danemark	France	Holland	Germany	Ireland
Foot	LM DP 55° + 65° = 4 projections	LM (DP DSB)	LM DP 55°		LM up fetlock DP 55° DP 55° + 65° = 4 projections	LM up fetlock DP 55° on block (for side views) DP 55° + 65° = 4 projections
Front Fetlock	LM		LM	DL-PMO 45° DM-PLO 45	With foot	With foot
Carpus			DP			
Hind Digit	LM	LM including feet	LM	DL-PMO 45° DM-PLO 45	LM From foot to fetlock	LM up fetlock
Hocks	LM DL-PMO 45° DM-PLO 45	LM 45° DP 115° PL-DMO 115°	LM (DP)		DL-PMO 45° DM-PLO 45	LM DL-PMO 45° DM-PLO 45°
Stifles	LM	LM	LM (CdLat)		LM	LM
Others	TOTAL=18	TOTAL=14	TOTAL=14	TOTAL=12	TOTAL=12	TOTAL=18

QUALITY CRITERIA

- Quality of the X-Rays
- Only Digital Pictures (exception - old horses)
- Only Dicom Presentation
- Visible Architecture of the bone
- Visible Soft Tissue
- Visible Joint Spaces
- (Sedation - optional)



Determining SEPARATE CATEGORIES

- NUMBER of categories
- DESCRIPTION of categories



2- second step = radiographic interpretation

RS = sum of the severity indices of all radiographic findings

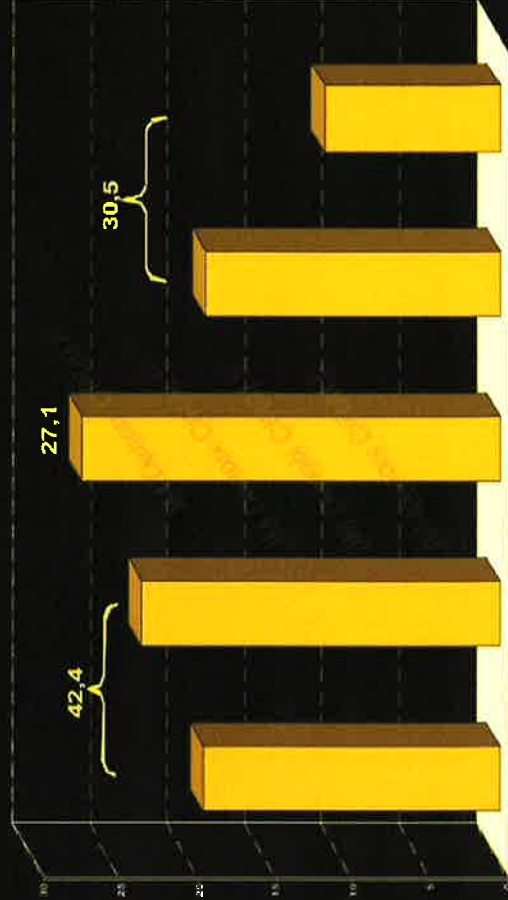
Grades	Potential clinical significance	Severity
1	Suspicious RF, intermediate between normal & abnormal	1
2	Mild abnormal RF (ARF), rarely associated to clinical manifestations (e.g. <25%)	2
3	Moderate abnormal RF (ARF), potentially associated to clinical manifestations (e.g. 25-75%)	4
4	Severe abnormal RF (ARF), often or always associated to clinical manifestations (e.g. <25%)	8

$RS = xSlrf1 + ySlrf2 + \dots + zSlrfn$


Radiographic Score: just an example!



Distribution of 3-year-old French horses within 5 Radiographic Categories (1997)



2340 encalameo.com Cher Epoux SF BAU 1,65 M, 2012



TRÈS PROMETTEUR

LES POINTS FORTS :

- SANG ET ÉNERGIE
- APPÉTUES A L'OBSTACLE-STYLE-SOUPLESSE-TECHNIQUE
- MENTAL
- BONNE LIGNÉE MATERNELLE

STATUT OSTÉO-ARTICULAIRE : Excellent

EXPERTISE JUGES SF OBSTACLE

TYPE DE JURY	DATE	NOTE
4 ^{ME} MÈRE	5 ^{ME} MÈRE	Total points pondérés
PRIMEVERE	KEFOUNE	34,6
		8/10

5,3

2340 encalameo.com

TRÈS PROMETTEUR

LES POINTS FORTS :

- SANG ET ÉNERGIE
- APPÉTUES A L'OBSTACLE-STYLE-SOUPLESSE-TECHNIQUE
- MENTAL
- BONNE LIGNÉE MATERNELLE


STATUT OSTÉO-ARTICULAIRE : Excellent

EXPERTISE JUGES SF OBSTACLE

TYPE DE JURY	DATE	NOTE
4 ^{ME} MÈRE	5 ^{ME} MÈRE	Total points pondérés
PRIMEVERE	KEFOUNE	34,6
		8/10

5,3

2341 encalameo.com Adzaro de L'Abbaye SF BAIFORCE 2010



TRÈS PROMETTEUR

EXPERTISE JUGES SF OBSTACLE

TYPE DE JURY	DATE	NOTE
LOCOMOTION		16
EQUILIBRE, DISPONIBILITÉ		16
MOYENS, TRAJECTOIRE		16
STYLE		16
RESPECT, INTELLIGENCE DE LA BARRE, SANG		15
IMPRESSION D'ENSEMBLE CSO		16
ISO (2015)		131
STATUT OSTÉO-ARTICULAIRE		Intermédiaire

24,3 / 7/10

EXPERTISE JUGES SF OBSTACLE

- Locomotion, galop : 16
- Equilibre, disponibilité : 16
- Moyens, trajectoire : 16
- Style : 16
- Respect, intelligence de la barre, sang : 15
- Impression d'ensemble CSO : 16
- ISO (2015) : 131
- STATUT OSTÉO-ARTICULAIRE : Intermédiaire

BAI FONCÉ, 2010
1,70 M

Naisseur : G.A.E.C. DE L'ABBAYE (50)

Propriétaire : M. RICHARD LEVALLOIS (50)

Eligible au programme SF jeune génétique 2016

- Nombre d'années de monte en France : 2
- Total juments saillies en France : 114
- Juments saillies en 2015 : 47

Agreement on RADIOLOGICAL INTERPRETATION

After examination of X-Rays from different countries, specialists have screened the findings, joint by joint on the RS scales.



There are TWO general concepts:

OCD

- is defined as:
- A predisposed skeletal disease responding to mechanical injuries with possible influence of feeding
 - CRATERS & FLATTENINGS do not have the same prognosis on performance in sport but DO have the same GENETIC SIGNIFICANCE
 - "OCD free" cannot exist as long as the entire skeleton has not been checked.

Fractures

- Do not have a genetic significance BUT CAN RESULT FROM:
- A large CYST (disease during bone growth)
 - A big LOLLYPOP (navicular disease)
- CYSTS & LOLLYPOPS HAVE A GENETIC SIGNIFICANCE

OCD is defined as:

- A predisposed skeletal disease responding to mechanical injuries with possible influence of feeding
 - CRATERS & FLATTENINGS do not have the same prognosis on performance in sport but DO have the same GENETIC SIGNIFICANCE.
- "OCD free" cannot exist as long as the entire skeleton has not been checked.

Fractures

Do not have a genetic significance
BUT CAN RESULT FROM:

- A large CYST
(disease during bone growth)
- A big LOLLYPOP
(navicular disease)

**CYSTS & LOLLYPOPS HAVE
A GENTIC SIGNIFICANCE**

Examination Joint by Joint

THE FOOT

- Navicular Osteodensity
- Lollypops
- Side Bones Ossification

FETLOCKS (front & hind)

Lesions on the FETLOCKS
are MORE SIGNIFICANT
than on the hindlegs

THE CARPUS

THE STIFLE

- Flattening
- Concavity
- Indentation

THE HOCK

- Spinin
- Intertarsal collapse

THE FOOT

- Navicular Osteodensity
- Lollypops
- Side Bones Ossification

FETLOCKS (front & hind)

Lesions on the FORELEGS
are MORE SIGNIFICANT
than on the hindlegs

THE HOCK

- Spavin
- Intertarsal collapse

THE CARPUS

THE STIFLE

- Flattening
- Concavity
- Indentation

IN CONCLUSION



HARMONISATION OF X-RAYS

WBFSH

ROLEX

Determining SEPARATE CATEGORIES
• NUMBER of categories
• DESCRIPTION of categories

Defining a COMMON PROTOCOL
for
NUMBER & PROJECTION
of X-Rays

Agreement on RADIOLOGICAL INTERPRETATION
After examination of X-Rays from different countries, specialists have to compare the findings, and to reach an agreement on the PS results.