

ANCCE **PRE Breeding Program**



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HISTORICAL ASPECTS OF PRE HORSE



- ✚ Spanish Purebred Horse (PRE) is considered the most ancient horse breed in the Iberian Peninsula (Aparicio, 1944).
- ✚ It is involved in the formation of some other horse breeds such as Lusitano, Lippizan, present native horse American strains (Paso Fino) and other Central European Warm-bloods.

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HISTORICAL ASPECTS OF PRE HORSE



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PRE STUD BOOK


- ✚ The official Stud Book was created in 1912.
- ✚ The PRE Stud Book is handled by ANCCE since 2007.
- ✚ More than 14,000 Spanish Purebred horse breeders in Spain.
- ✚ More than 3,000 in the rest of the world.
- ✚ There are about 180,000 registered horses throughout the whole world, bred in more than 50 countries.



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PRE STUD BOOK

- ✚ The PRE Stud Books issues Equine Identification Documents (EID) for all Purebred Spanish Horses in the world.
- ✚ For this, ANCCE uses a sophisticated, Internet-based communication and information tool, which keeps all those responsible for its handling in contact, both within and outside of Spain.



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PRE STUD BOOK

¥ The main PRE Stud Book office is located in Sevilla and counts on the collaboration of LG PRE ANCCE Veterinary Representatives in Spain (20 National Representatives) and Collaborating International Associations (18 International Representatives).



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PRE STUD BOOK

✓ The LG PRE ANCCE Stud Book office offers all PRE breeders the following services:

- Identification for Inscription
- Basic Revision (evaluation) as breeding stock
- Identification to renew EID
- Analysis (identification verification)
- Change of ownership
- Establishment of Ownership Card
- Duplicate Ownership Card
- Duplicate Equine ID Documents (EID)
- Issue of Breeder or Owner Code
- Coat colors Genetics
- Horse change of name
- Export Certificates
- Other Certificates
- Other Services

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PRE STUD BOOK

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PRE STUD BOOK

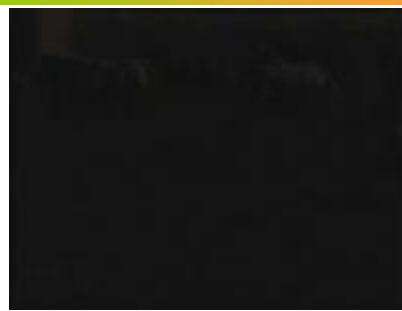
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MORFOLOGICAL CHARACTERISTICS



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BREEDING PROGRAM



- ✚ The PRE Breeding Program was approved by the Ministry of the Environment and Rural and Marine Affairs the November 14th, 2003.
- ✚ It was the first Breeding program of horses approved in Spain.
- ✚ It is managed by the MERAGEM research Group (Dra. M. Valera)
- ✚ The main objective pursued by the PRE Breeding Program is to improve their conformation and functionality.
- ✚ To achieve this general objective, the following specific objectives are contemplated:

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BREEDING PROGRAM



- ✚ Obtain healthy horses with no hereditary defects.
- ✚ Improve the morphological characteristics of the breed, in accordance with the breed quality established for the PRE Horse.
- ✚ Improve the conformation, this being understood as the improvement of the visible morphology directed towards a specific function.
- ✚ Improve the functional potential of the PRE Horse for the various competitive disciplines.
- ✚ Maintain, and where relevant, improve behavioral characteristics.

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BREEDING PROGRAM

✚ To attain these objectives, a number of aspects are taken into consideration for selection:

- U Genealogical criteria:
 - Genealogical data of horses in performance tests for genetic evaluations.
 - Population structure analysis: Inbreeding coefficient, relationship, gene flow, etc.
 - Studies of families to establish the type of genetic transmission of hereditary diseases or morphologic defects..
- U Reproductive criteria, health care and genetics to assure correct reproductive physiology.
- U Conformational-functional aspects using Lineal Conformation Score methodology.
- U Functional criteria: Dressage.
- U Environmental criteria: Correction factors.

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BREEDING PROGRAM



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PHASES OF THE PRE BREEDING PROGRAM

PHASE ONE: GENEALOGICAL ASSESSMENT: BIRTH REGISTER

- ✚ With DNA parentage testing, the dependability of the genealogical data is guaranteed, which is the basis for genetic evaluations as proposed in the Breeding Program.
- ✚ 20 generation are known.
- ✚ Likewise, biological material from the horses is included in the sample bank for future use to diagnose hereditary diseases.



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PHASES OF THE PRE BREEDING PROGRAM

PHASE TWO: GENEALOGICAL ASSESSMENT: BREEDING STOCK REGISTER

- ✚ A genealogical study is performed from time to time to determine the main parameters of the PRE population which allows the genetic variability of the breed to be estimated: coefficient for inbreeding and average relationship, average kinship, etc.
- ✚ These parameters are so important that ANCCCE shows them on its web site so breeders can use them to select breeding stock.



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PHASES OF THE PRE BREEDING PROGRAM

PHASE TWO: GENEALOGICAL ASSESSMENT: BREEDING STOCK REGISTER

- ✚ Thanks to this ANCCE policy, the inbreeding coefficient has not increased as breeders are now able to calculate the desired percentage for future generations.
- ✚ The breed inbreeding average is now about 8%
- ✚ The dependability of genealogical data is such that when molecular markers are used, these are coincident.



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PHASES OF THE PRE BREEDING PROGRAM

PHASE TWO: GENEALOGICAL ASSESSMENT: BREEDING STOCK REGISTER



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PHASES OF THE PRE BREEDING PROGRAM

PHASE THREE: PERFORMANCE TESTS AND GENETIC EVALUATION: YOUNG RECOMMENDED BREEDING STOCK



- ✚ The performance tests in the PRE Breeding Program are:
 - Conformation
 - Dressage
 - Environmental data
- ✚ After genetic assessment, the following categories are determined:
 - Young Recommended Breeding Stock for conformation trait for dressage
 - Young Recommended Breeding Stock for dressage

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PHASES OF THE PRE BREEDING PROGRAM

PERFORMANCE TESTS: CONFORMATION



- ✚ Information collected in Performance Tests:
 - U Hose Identification
 - U Zoometric measurements.
 - U Morphological defect detection.
 - U Lineal Conformation Score methodology (ORDEN APA/1018/2003)

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PHASES OF THE PRE BREEDING PROGRAM

PERFORMANCE TESTS: CONFORMATION

- ✚ The Lineal Conformation Score methodology designed for the PRE is based on the translation of the degree that certain conformation characteristics appear in the horse, following a fixed, numerated pattern.
- ✚ The design of this system demanded that zoometric measurements had to be obtained from the population sample.
- ✚ The evaluators for each variable in this system were trained and then assessed.

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PHASES OF THE PRE BREEDING PROGRAM

PERFORMANCE TESTS: CONFORMATION (LCS)

VARIABLES	1	2	3	4	5	6	7	8
LONGITUD Y CIRCUNFERENCIA								
Length of Head	300-320 (100)	320-340	340-360	360-380	380-400	400-420	420-440	440-460



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PHASES OF THE PRE BREEDING PROGRAM

PERFORMANCE TESTS: CONFORMATION (LCS)



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PHASES OF THE PRE BREEDING PROGRAM

PERFORMANCE TESTS: CONFORMATION (CML)



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PHASES OF THE PRE BREEDING PROGRAM

PERFORMANCE TESTS: CONFORMATION (CML)



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PROVINCIA	CATEGORÍA	PRUEBA	FECHA	INDICADOR	INDICADOR	INDICADOR	INDICADOR	INDICADOR	INDICADOR	INDICADOR	INDICADOR	INDICADOR	INDICADOR	INDICADOR	INDICADOR	INDICADOR	INDICADOR	INDICADOR
ZARAGOZA	EXPONCAMÁN	DOMA CLÁSICA	18/02/2011	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
MADRID	DOMA CLÁSICA	18/02/2011	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
																	MÁLAGA	DOMA CLÁSICA
TOLEDO	TRC	18/02/2011	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
																	SEVILLA	SEVILLA
ALMERIA	DOMA CLÁSICA	18/02/2011	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
																	SEVILLA	CONCURSO Y DOMA

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PHASES OF THE PRE BREEDING PROGRAM

PERFORMANCE TESTS: CONFORMATION (LCS)

- ✖ This Lineal Conformation Score methodology is completed with other traits as "Breed Quality"
- ✖ This performance test are performed at:
 - 🕒 Basic Evaluation as Breeding Stock
 - 🕒 Young Horses Selection Tests
 - 🕒 Qualify breeding Stock tribunals
 - 🕒 Dressage Tests
 - 🕒 Morpho-functional tests.

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PHASES OF THE PRE BREEDING PROGRAM

PERFORMANCE TESTS: CONFORMATION (LCS). 2011

LUGAR	PROVINCIA	PRUEBA
EOLUZAR	ZARAGOZA	DOMA CLÁSICA
EXPONCAMÁN	ALBACETE	MORFOLOGICO
RACE	MADRID	DOMA CLÁSICA
ESTERONA	MÁLAGA	DOMA CLÁSICA
TALAVERA	TOLEDO	TRC
SEVILLA	SEVILLA	TRC
ALMERIA	ALMERIA	DOMA CLÁSICA
SICAB	SEVILLA	CONCURSO Y DOMA

3,516 PERFORMANCE TESTS

2,179 HORSES CONTROLLED:
1,125 M Y 1,054 F (805 BREEDERS)

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PHASES OF THE PRE BREEDING PROGRAM

GENETICS EVALUATIONS BASED ON CONFORMATIONAL DATA (2011)

- ✚ Genetic evaluation based on conformational data are performed using BLUP animal model system.
- ✚ Genetic evaluations are performed for twenty-nine conformational traits.
- ✚ A Genetic Index for conformation for Dressage are performed using the breeding value pondered for 16 traits.



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PHASES OF THE PRE BREEDING PROGRAM

GENETICS EVALUATIONS BASED ON CONFORMATIONAL DATA (2011)

SECOND GENETIC EVALUATION

10.978 EVALUATED HORSES: 3.858 M AND 7.120 F
(1.531 BREEDERS)



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PHASES OF THE PRE BREEDING PROGRAM

BREEDING STOCK GENETIC CATEGORIES BASED ON CONFORMATIONAL DATA

Young Recommended Breeding Stock for Lineal Conformation Traits for dressage

These horses are between 4 and 6 years of age, are in the testing phase and have earned a genetic index greater than the average evaluated population



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PHASES OF THE PRE BREEDING PROGRAM

PERFORMANCE TESTS: FUNCTIONAL TEST

- ✚ Young Selection Test for Dressage.
- ✚ The following information is necessary:
 - U Horse identification
 - U Functional data (Dressage)
 - U Environmental data
 - U Lineal Conformation Score methodology.
- ✚ Initially, the PRE Breeding Program only includes the aptitudes of the horses for Dressage in the functional selection, as this discipline has a greater number of PRE participants.
- ✚ Other disciplines may be included in the future.

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PHASES OF THE PRE BREEDING PROGRAM

PERFORMANCE TESTS: FUNCTIONAL TEST (2011)

	LUGAR	PROVINCIA	FECHA	4 AROS	5 AROS	6 AROS	TOTAL
1ª prueba	Fleisch. Valencia	Valencia	1-3 de Abril	12	9	2	23
2ª prueba	Puerto Alicante	Alicante	12-24 de Abril	7	7	3	17
3ª prueba	Alcab	Almería	29 de Abril al 1 de Mayo	11	12	4	27
4ª prueba	Ecuzar	Zaragoza	Del 13 al 15 de Mayo	17	19	5	41
5ª prueba	Palacio Ferial de IFAB	Alicante	Del 20 al 21 de Mayo	17	16	9	42
6ª prueba	Club Hípico Alator	Menorca	Del 28 al 29 de Mayo	3	3	4	10
7ª prueba	RACE	Madrid	Del 3 al 5 de Junio	18	19	8	45
8ª prueba	Recinto Ferial de Cambrils	Tarragona	Del 19 al 19 de Junio	10	8	2	20
9ª prueba	Dehesa Montfermedio	Cádiz	Del 24 al 26 de Junio	20	13	5	38
10ª prueba	E. de Arte E. Costa Sol	Málaga	Del 8 al 10 de Julio	19	15	9	43
11ª prueba	Complejo Aros	Murcia	Del 16 al 17 de Julio	6	6	3	15
12ª prueba	E. H. Huelva	Huelva	Del 26 al 26 de Aogo	20	15	9	44
13ª prueba	C.E. Asturcon (Oviedo)	Asturias	Del 2 al 4 de Sep.	21	11	10	42
FINAL	Club Hípico y Polideportivo	Almería	Del 29 de Sep. al 2 de Oct	35	22	16	73

200 horses
(824: 790 males and 34 females)
446 BREEDERS

480 performance tests
(3.031)

+ RFHE

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PHASES OF THE PRE BREEDING PROGRAM

GENETICS EVALUATIONS BASED ON FUNCTIONAL DATA (2011)

- ✚ Genetic evaluation based on functional data are performed using BLUP animal model system.
- ✚ The genetic evaluation is performed for 3 dressage variables.
- ✚ A genetic index for Dressage are performed using the breeding value pondered for these three traits.



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PHASES OF THE PRE BREEDING PROGRAM

GENETICS EVALUATIONS BASED ON FUNCTIONAL DATA (2011)

SIXTH GENETIC EVALUATION

7,488 EVALUATED HORSES



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PHASES OF THE PRE BREEDING PROGRAM

BREEDING STOCK GENETIC CATEGORIES BASED ON FUNCTIONAL DATA

Young Recommended Breeding Stock for Dressage

These horses are between 4 and 6 years of age, are in the testing phase and have earned a genetic index greater than the average evaluated population



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PHASES OF THE PRE BREEDING PROGRAM

PHASE FOUR: GENETIC EVALUATION BASED ON DESCENDANT: PROVEN AND ELITE BREEDING STOCK



- ¥ In this phase, the Program genetically assesses the horses that already have descendants in the performance test.
- ¥ The genetic evaluation are based on descendants (progeny test) using the BLUP animal model methodology.

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PHASES OF THE PRE BREEDING PROGRAM

BREEDING STOCK GENETIC CATEGORIES BASED ON DESCENDANTS

Improve Breeding Stock for Lineal Conformation Traits for Dressage

Improve Breeding Stock for Dressage

ELITE Breeding Stock

- ¥ Horses that more than 6 years old with positive progeny test, an above average genetic index of the evaluated population with a dependability (repeatability) ³ 60%.

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PHASES OF THE PRE BREEDING PROGRAM

BREEDING STOCK GENETIC CATEGORIES BASED ON DESCENDANTS



- ¥ These sire stallions and broodmares are most important for the breed, as their genetic quality has been confirmed through assessment of their descendants.
- ¥ Maximum dissemination is given by ANCCE to these horses as they significantly contribute to the improvement of the breed.

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PHASES OF THE PRE BREEDING PROGRAM

PHASE FIVE: CATALOG OF BREEDING STOCK

TWO TYPES OF CATALOGS OF BREEDING STOCKS

CONFORMATION TRAITS

DRESSAGE



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PHASES OF THE PRE BREEDING PROGRAM

PHASE FIVE: CATALOG OF BREEDING STOCKS



SECOND CATALOG OF YOUNG RECOMMENDED BREEDING STOCK FOR LIEAL CONFORMATION TRAITS

96 YOUNG RECOMMENDED BREEDING STOCK FOR LIEAL CONFORMATION TRAITS
32 MALES AND 64 FEMALES
(62 BREEDERS)

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PHASES OF THE PRE BREEDING PROGRAM

PHASE FIVE: CATALOG OF BREEDING STOCK



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PHASES OF THE PRE BREEDING PROGRAM

PHASE FIVE: CATALOG OF BREEDING STOCK



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PHASE FIVE: CATALOG OF BREEDING STOCK



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PHASE FIVE: CATALOG OF BREEDING STOCK



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PHASE FIVE: CATALOG OF BREEDING STOCK



SIXTH CATALOG OF YOUNG RECOMMENDED BREEDING STOCK FOR DRESSAGE

50 YOUNG RECOMMENDED BREEDING STOCK: 47 MALES AND FEMALES



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PHASE FIVE: CATALOG OF BREEDING STOCK



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PHASES OF THE PRE BREEDING PROGRAM

PHASE FIVE: DIFUSION OF GENETIC IMPROVE



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PHASE FIVE: CATALOG OF BREEDING STOCK



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PHASE FIVE: CATALOG OF BREEDING STOCK



All catalogs of Breeding Stock are published on the ANCCE web site:
<http://www.ancce.com>
<http://www.marm.es>

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FOR MORE INFORMATION
PLEASE VISIT:

<http://www.ancce.com>
<http://www.lgancce.com>

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