



SAVE-Monitoring Institute: <http://www.save-foundation.net>



Δίκτυο προστασίας για τα Ελληνικά
αγροτικά και οικόσιτα ζώα

How to run a Herdbook: Basics and Modern Software

*‘Δίκτυο σπάνιων φυλών αγροτικών ζώων της Ελλάδας– Έμφαση στα μικρά μηρυκαστικά.’
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Basics

- According to the pedigree scheme, you need to write down the ancestors of your animals.
- Breeders should be able easily to write down the necessary data
- It is better to have one person, who leads the register and makes the entries in a computer
- Decide for ONE system, otherwise you can lose the overview

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Example Booted Goat Notification of Birth Annotations



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Erläuterungen zum Ausfüllen der Geburtsmeldeformulare

| | | |
|---|----------------------|--|
| <i>Wurf Datum</i> | <i>obligatorisch</i> | <i>Geburtsdatum der Gitzi</i> |
| <i>Name des Muttertieres</i> | <i>fakultativ</i> | |
| <i>Ohrmarke Mutter (TVD=7-stellig)</i> | <i>obligatorisch</i> | <i>Die TVD-Ohrmarke ist 7-stellig</i> |
| <i>Name des Vaters</i> | | |
| <i>Ohrmarke Vater (TVD=7-stellig)</i> | <i>obligatorisch</i> | <i>Die TVD-Ohrmarke ist 7-stellig</i> |
| <i>Name des/der Jungtiere</i> | | |
| <i>Ohrmarke Jungtier 7-stellig</i> | <i>obligatorisch</i> | <i>Die TVD-Ohrmarke ist 7-stellig</i> |
| <i>Weiblich Männlich</i> | <i>obligatorisch</i> | |
| <i>Lebend Tot</i> | <i>obligatorisch</i> | <i>Lebend oder tot, tot innert 24 h nach der Geburt = Totgeburt</i> |
| <i>Überbiss</i> | <i>obligatorisch</i> | <i>Ja = Überbiss vorhanden, Nein = kein Überbiss</i> Die Ziegen haben am Oberkiefer keine Schneidezähne, sondern nur eine Oberkieferplatte. Stehen die Schneidezähne des Unterkiefers von der Seite gesehen mehr als 5 mm vor oder deutlich hinter dem Rand dieser Platte spricht man von Überbiss. |
| <i>Beistrich (Nebenzitzen)</i> | <i>obligatorisch</i> | <i>Ja = Beistriche vorhanden, Nein = keine Beistriche</i> Sind mehr als zwei Striche sichtbar (auch bei Bockgitzi) oder sind die Striche geteilt, spricht man von Beistrichen. |
| <i>Zucht Mast</i> | | |
| <i>Geburtsgewicht</i> | <i>fakultativ</i> | <i>Geburtsgewicht nur angeben, wenn alle Gitzi einer Geburtssaison gewogen werden</i> |
| <i>Bemerkungen: Erbfehler, Farbschlag, Glöggli usw.</i> | <i>fakultativ</i> | |

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Modern Software



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- One of the most important aspects in conservation programmes is it to restrain the rate of inbreeding.
- For the management of a conservation programme, monitoring of changes in the genetic variability and population structure, software programmes help to make the analysis

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- SAVE Homepage:
- <http://www.save-foundation.net/english/downloads.htm>

Useful information:

- [Review of Pedigree Programmes with Analysis Software](#)

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There are different software programmes available.
Some of them are free software in the internet, others
you have to pay for.

Software programmes have different target groups and
goals of interest.

Test the software with regard to your own needs.

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| Pedigree Software Programms (General overview) | | | | | |
|--|---|--|---|---|--|
| Name | General Features | Usability | Experiences/ bugs | Download | Training/ Support |
| ENDOG | A Computer Program for Monitoring Genetic Variability of Populations Using Pedigree Information | after installation simple (pay attention to the right allocation of correct data fields) | Watch for correct input data, male=1; female=2 | http://www.ucm.es/info/rodanim/html/JP_Web_archivos/Endog45.zip | |
| OPTIMATE | A Computer Program for registration and simple working on genealogic data. A helpful tool for breeders to give informations for mating and reducing inbreeding. | uncomfortable DOS orientated program, fast calculation of gene rates | easy understandable and easy to install, interesting for small population, mass data input is uncomfortable | http://www.tiho-hannover.de/einricht/zucht/optimate/index.htm | The program is out of development now. Questions to: Tierärztliche Hochschule Hannover Institut für Tierzucht und Vererbungsforchung Tel.: 0511 - 953 8582 |
| ZVSN | The animal database ZVSN is mainly a breeding programm for the practical use in the field of conservation programmes, but with opportunities for recording characteristics and inbreeding analyses. | Programm comes out of practical use, but a general affinity for computers is indispensable | | http://www.zuchtbuchprogramm.com/index.php | Programming help function, Training possible, support with data integrating and special programming adaptations and live support via internet |
| PEDSYS | PEDSYS (Pedigree Database System) is a series of programs written for management and analysis of genealogical and demographic data | very unconvinient to install, Status of 1999 | | ftp://www.sfbr.org/pub/pedmgtpedsys | ftp://www.sfbr.org/pub/pedmgtpedsys/PSManual.pdf |
| Breeders Assistant | Breeders Assistant is a pedigree and record keeping software program for breeders. | can integrate and export data e.g. via *.csv or *.xml, very comfortable design and data in- and output | | http://www.tenset.co.uk/ | Tutorial Guide |
| Chromosoft | Chromosoft is s Internet database, alternatively a online breeding book , especially interesting for breeding associations or clubs which want to input their data from different sites | Easy to understand | | demo version see www.chromosoft.com | |
| InterHerd | Is a Access based software for the daily administration of breed and health data and additionally for financial management. It is not a pure pedigree system | | | www.interagri.org | |

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| Pedigree Software Programms (Features) | | | | | | |
|---|---|---|---|---|---|---|
| ENDOG | OPTIMATE | ZVSN | PEDSYS | Breeders Assistant | Chromosoft | InterHerd |
| (F) individual inbreeding Wright 1931 | Pedigrees for 4 generations | Genetical presence | <u>Pedigree Management (8 programs)</u> | It includes fully customizable printed pedigrees, text, image, HTML and circular pedigrees. | Chromosoft is a record keeping software, interesting for keepers at different locations | Flock management software, no Pedigree Software! |
| (AR) Average relatedness, Goyache-Gutierrez | Calculation of inbreeding coefficient from 2 up to 11 generations | Inbreeding coefficient | Finds common ancestors for selected probands | Many features for linechasers, kennel/cattery management and comprehensive record keeping. | Data input is made by Internet, which means different persons can input birth notifications from different stations | In combination with the Modul InterTrace is a full traceability is possible |
| Inbreeding per Generation | calculation of inbreeding for a planned mating | Extensive and praxis orientated data input management (Arrangement, ancestors, offspring, inbreeding, distribution) | Identifies pedigrees and assigns individuals to them | calculation of Wright's inbreeding coefficient. | Search & professional search | The focus lays on health and financial management |
| Pedigree Content | Coefficients of relationships between groups and individuals | animal-project-person relationships, achievement census, assesment | Determines contribution of founders to subsequent generations | range of Reports available including ancestor and descendant analyses | Saving of the search results | Daily event list with health checks and planned measures |
| Founders | Detection of the most important ancestors | Rich search mask with the possibility to refine the search (upt to 20 steps) | Transforms pedigree data into Master File format | contracts/agreements area | Description and advertisement site for breeding associations | Lactat part of the milk is presentable as a graphics |
| Partial Inbreeding | Listing of all offsprings for every individual | Print with layouts for adress reports, genetical presence, inbreeding coefficients | Calculates inbreeding, kinship coefficients (Quaas-Henderson) | store all animal details, contacts, show records, litters, vet records, vaccinations, accounts and appointments/tasks. | Administration tool for birth and services notifications | Graphics of fertility |
| Generation intervals | Extensive checks of plausibility | grouping functions, interim grouping | Constructs extended pedigrees for specified probands | genetics tools e.g. prediction of genotypes (coat color genetics, carried traits + diseases via simulation of Mendelian genetics) | Calculation of the inbreeding coefficient of all known ancestors, virtual offsprings etc. | |
| Offspring analysis | Lots of characteristics can be recorded | | Creates Pedigree/Draw formatted file from PEDSYS records | calculation of inheritance probability of specific genes | Pedigree visualisation | |

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Conclusions:

- For some programmes you need to be experienced in computing and statistics (PEDSYS, ENDOG)
- For a small budget and basic computer knowledge the Breeders Assistant maybe the right choice
- Chromosoft is useful for breeders at multiple locations (protected Internetaccess; combination of different datasets)
- InterHerd works on access basis to the data....
- Mainly the software is shared via distributors. see.: <http://www.interagri.org/E/distributors.htm>

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Thank you very much

Ευχαριστώ πολύ

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