



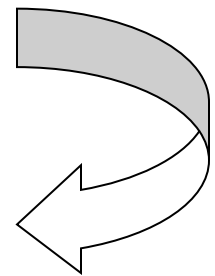
## Management Group Notions

The first notion to consider when you wish to evaluate animals using the GenOvis program is the management group. The genetic evaluation program relies heavily on the adequate use of management groups. It is therefore important to understand what this exactly means as **it is the basis of an efficient genetic evaluation.**

### Genetic Basis

$$P = G + E$$

**P : Performances**  
**G : Genetic Factors**  
**E : Environmental Factors**



### Objectives:

Isolate at maximum the environmental factors which can influence the performances of an animal to estimate effectively the impact of the genetics on them.

Animal performances are corrected to account for the environment effects to allow selecting the real best performing animals.

### What are the environmental factors?

- Management
- Out of season breeding methods (Photoperiod, CIDR, MGA, etc.)
- Feeding
- Barn type
- Others...

### How to remove environmental effects on animal performances?

By comparing between them animals:

- Of same breed or cross
- Raised together (interval of about 41 days)
- Raised in the same barn and same conditions
- Managed the same way



## Basic Rules of Management Group Creation

Ideally, a minimum of **3 FERTILE RAMS (UNRELATED)** should be used when mating in the same management group. Repeated use of these **SAME RAMS IN 3 OTHER MANAGEMENT GROUPS** is recommended. A minimum of **3-4 FERTILE MATES PER RAM** and a **SIMILAR NUMBER OF MATES FOR EACH RAM** in a group is to prioritize. This improves the comparison between individuals to obtain a similar number of progeny per ram in different environments (different management groups).

A minimum of **10 LAMBS** by management group of the same breed or cross from **3 DIFFERENT DAMS** and **WEIGHED AT 100 DAYS** is needed to get a good variability. This will increase the accuracy of genetic evaluations.

**SEPARATE THE LAMBS BY BREED AND/OR SEX** if the lambs evaluated have early sexual maturity or are very competitive with other breeds (sufficient feeding space).

**An optimal environment will allow an animal to express its full genetic potential!**

## The Optimum

Mate all the ewes of the flock of the same breed at the same time with a predetermined number of rams to obtain a single management group of a defined breed per year.

All the lambs of the same breed born within a year could be included in a single management group.

### Objectives:


- Avoid the creation of several small groups of lambs of the same breed that don't meet the minimum requirements of the management groups.
- Optimize the comparison of individuals by increasing the number of lambs evaluated within the same management group.

\*\*\* ONLY APPLICABLE FOR SMALL SIZE FLOCK \*\*\*

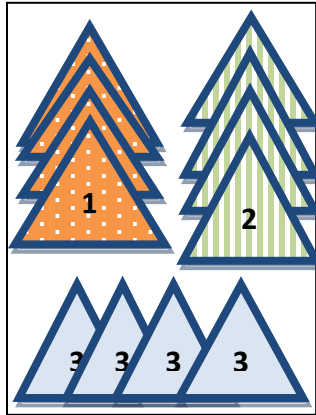


### Well-balanced groups:

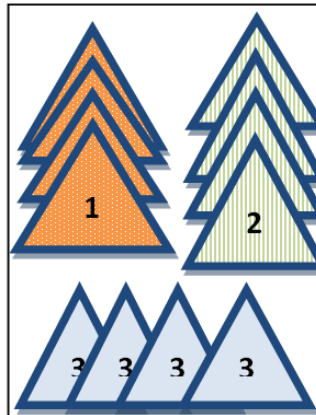


 Represent the ewes bred with each ram

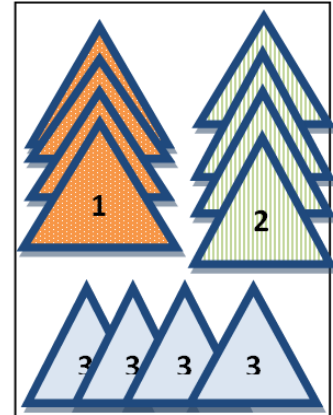
Rams equivalently represented in each group = Enables effective comparison between subjects.



Management Group # 1




Management Group # 2



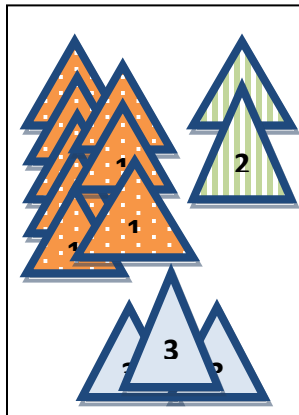
Management Group # 3

### Unbalanced groups:

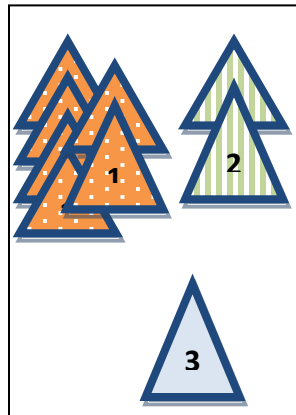


 Represent the ewes bred with each ram

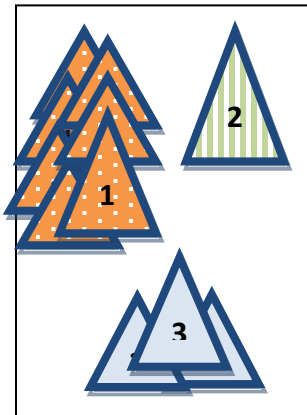
Rams unevenly represented in each group = Imbalance genetic sources that may affect the reliability of genetic evaluations.



Group # 1



Group # 2



Group # 3

**Imbalance causes by the overuse of Ram 1.**



## How to Manage it in Real Cases?

### **NATURAL MATES V/S HORMONAL TREATMENTS (CIDR, PMSG INJECTIONS, AI, MGA)**

*Separate into two different management groups respecting the minimum criteria. (see the Basic Rules of Management Group Creation)*

**MANAGEMENT GROUP CREATION STARTS AT MATING TIME.** The lambs' dam must receive the same management on the same production schedule from breeding until lambing. Hormonal treatment may increase the natural prolificacy of sheep, causing an improvement in performance due to environmental rather than genetic.

### **COLD BARN V/S WARM BARN**

*Separate into two different management groups respecting the minimum criteria. (see the Basic Rules of Management Group Creation)*

Lambs of a same management group must have undergone the same **ENVIRONMENT**. In case we need to separate feeder lambs as an half will be raised in a warm barn and the other in a cold barn, thereby it is recommended to separate males from females. This will help to adjust the feeding according to their needs, standardize and reduce the group's competitiveness due to sex.

### **FEEDING AT WILL UNTIL 100 DAYS OF AGE V/S FEED RESTRICTION OF FEMALES BEFORE 100 DAYS OF AGE**

*Separate into two different management groups respecting the minimum criteria. (see the Basic Rules of Management Group Creation)*

Lambs of a management group must have undergone the same **MANAGEMENT**. Gather together in the same management group the animals that undergone a feed restriction. **AVOID FEED RESTRICTION IN REPLACEMENT ANIMALS BEFORE 100 DAYS OF AGE.**

### **HEALTHY ANIMALS V/S SICK ANIMALS WHICH PERFORMANCES ARE HIGHLY AFFECTED**

*Do not separate the management group.*

*50 day and/or 100 day weights of sick animals (pneumonia, diarrhea ...) whose performances are **VERY affected** by the disease (loss weight between weighings or significant weight difference compared to the group average) should not be included in the evaluation program and a code should be assigned.*