Prepare the Pedigree File

1	Install R and RStudio	2	Install the Genetic Metrics Software	3	Prepare the Pedigree File
4	Run the Genetic Metrics Software	5	Import the Pedigree File	6	Browse Pedigree; Refine Breeding Population
7	Calculate Genetic Value	8	View Summary Statistics	9	Calculate Potential Breeding Groups
	Definitions and Citations		Genetic Value Analysis Algorithm		Breeding Group Formation Algorithm

The pedigree file forms the basis for genetic value analysis and the formation of breeding groups. The software requires a separate pedigree file for each breeding colony being analyzed. There can be multiple family lineages, or pedigrees, within a single breeding colony.

Pedigree File Format

Your pedigree file must minimally have the following columns:

- EGO ID
- SIRE ID
- DAM ID
- SEX
- Either AGE or BIRTH

Optional columns include:

- DEATH
- DEPARTURE
- EXIT
- **Any other columns included in the pedigree file will be ignored.**

Date format:

- All dates (BIRTH, DEATH, DEPARTURE, and EXIT) should be in the format YYYY-MM-DD.
- This date option can be found under the "United Kingdom (English)" locale. To find this date format,
    - Highlight the date column.
    - Select the **Format** menu; then select **Cells**. The Format Cells dialog box will open.

    - Under "Category," select **Date**.
    - Under Location, select **United Kingdom (English)**.
    - Under Type, select the date that fits the **YYYY-MM-DD** format.

Example with Age:

EGO ID	DAM ID	SIRE ID	SEX	AGE
41475	27711	37422	M	1
41478	37383	34110	F	1

41511	37127	37559	F	1
41518	37525	36305	F	1

Example with Date of Birth:

EGO ID	SIRE ID	DAM ID	SEX	BIRTH
396		35	Male	1979-03-04
397		124	Female	1979-03-29
398		204	Female	1979-03-30

Formatting and saving the pedigree file:

The Genetics Metrics Software expects the pedigree file to be formatted in one of these three formats:

- Comma separated variable (.csv)
- Tab separated variable (.txt)
- Semi-colon separated variable (.scsv)

The comma separated and tab separated options are available within Excel. To save an Excel spreadsheet to a comma separated variable format:

1. Select the **File** menu; then select **Save As**.
2. Browse to the location where you would like to store the file, and give your file a name.
3. Select the **Format** drop-down.
4. Select **Comma Separated Values (.csv)**
5. Click on **Save**.

Pedigree File Data Descriptions

Column	Description of Information
EGO ID	Unique animal identifier - Alphanumeric characters
SIRE ID	Unique identifier of the ego's father - Alphanumeric characters - If unknown, leave this blank.
DAM ID	Unique identifier of the ego's mother - Alphanumeric characters - If unknown, leave this blank.
SEX	Ego's sex - Male: ("male", "m", "1"), - Female: ("female", "f", "2"), - Unknown: ("unknown", "u", "3"), - Hermaphrodite: ("hermaphrodite", "h", "4")

AGE	Age at exit, or current age of the ego
	• Decimal years
BIRTH	Ego's date of birth
	• YYYY-MM-DD Format
DEATH	Ego's date of death
	• YYYY-MM-DD Format
DEPARTURE	Ego's date of sale
	• YYYY-MM-DD Format
EXIT	Ego's date of exit from the colony
	• YYYY-MM-DD Format • Supercedes Death or Departure information