

GMOANALYSIS - INSTALLATION MANUAL

VERSION 2.1.0 – 10 JULY 2014

1.1 REQUIREMENTS

- The software is developed for Windows 7. It has not been tested on earlier or later releases of MS Windows.
- This software requires .NET 4 client framework, but this will be checked and updated if necessary during installation.
- This software requires the installation of the statistical software R, version 2.15 or higher. See below. You can install R after the installation of the GMO analysis software, but you need to have it installed to run an analysis in GMOAnalysis.

1.2 INSTALLING GMOANALYSIS

Double click the *GMOAnalysisInstaller.msi*. This will install the program with an icon of a wheat ear on the desktop. If you have a previous version installed, it will try to uninstall that, but you might need to uninstall that manually (through Control Panel | Programs and Features).

1.3 INSTALLING R

To install R, go to the R website for downloading the Windows version on <http://cran.rstudio.org>. Click on the link "Download R.3.0.2 for Windows" (or other version). This starts downloading R.*-win.exe file for both 32 and 64 bit. After downloading, double click this file to install R. (you need admin right to install this). You can keep all the default settings.

Important: Make sure that you keep the default setting under Additional Tasks: "Save version number in registry" checked.

1.4 RUNNING THE PROGRAM

Double click on the GMOAnalysis icon on the desktop. During every startup, it will check the availability of R and the required libraries. If R is installed, but the libraries not yet, it will try to install them automatically. If this does not work for some reason, look at known problems below. If R is ready, you can start by opening an Excel file with data. Click on File | Import Excel File and load an Excel file which matches the specifications/format for this software. An example datafile is provided with the program in the Help directory (ExampleDataFile.xls).

Creating your own datafile:

- Click on the Help button in the software and go to the Annex section in the Help. This shows you a description of the data format of the excel file. Within Excel you can make a file with these headers and fill it with data. Then click on File | Import Excel File and load the new file. See Help for more instructions on using the software. Example data files may be available for download.

1.5 TROUBLESHOOTING

1.5.1 THE PROGRAM CANNOT CONNECT TO R

The main known problem is that GMOAnalysis cannot properly connect to R. The program will try to connect to R automatically, using RDotNet.dll and the registry settings of R. Sometimes this does not work as planned, probably due to security reasons. Depending on the error message, you should do the following:

- Make sure that R (version 2.15 or higher) is installed properly as described above.

- The GMO Analysis program requires installation of four R-libraries (*lme4*, *pbkrtest*, *lsmeans*, *arm*). If they are not yet available, it will attempt to automatically download and install them the first time GMO Analysis is run. If this fails, for example due to security reasons, you can try to install the libraries manually. For manual installation, start R (32-bits version / i386). At the R-prompt, type the following eight lines:

```
install.packages("lme4")
library(lme4)
install.packages("pbkrtest")
library(pbkrtest)
install.packages("lsmeans")
library(lsmeans)
install.packages("arm")
library(arm)
```

- If you still get the message that it is not working, look in the error-log-file which will open if an R-error is found during startup. Check if the PATH environment variable in the log file contains your R-directory. If it does not contain the R-directory, then there is a (security) problem to set this variable within the GMOAnalysis software. To solve this, you should add the R-directory to the environment variable PATH manually as described next.

1.5.2 MANUALLY CHANGING THE PATH ENVIRONMENT VARIABLE TO SEARCH FOR R

GMOAnalysis tries to automatically set the correct path for R and its libraries during startup. If this fails, you need to change the PATH variable by hand, which may require administration rights on your computer.

To add the R-directory to the PATH environment variable for Windows 7, do the following.

- Look where the *R.exe* file is located, e.g., *C:\Program Files\R\R-3.0.2\bin\i386*. Copy this directory string to the clipboard or write it down.
- Now you need to go to the environment variable section in system properties: Open the Control Panel and click on the System icon. This will open a System Control Panel. Click left on Advanced System Settings, which opens the System Properties window, with tab Advanced. Right down you can find the Environment Variables button. Click this button and in the window Environment Variables, go to the System Variables section, where you select the variable PATH (Path) from the list.
- Choose Edit... Now set the PATH variable manually by adding the R-directory string to the SYSTEM environment variable PATH (make sure to insert a semi-colon between directories). You can add it at the end or in front. Click OK. This should solve the problem.

1.5.3 SPECIFIC R LIBRARY COMMANDS MAY HAVE CHANGED

The R-libraries each have different versions, which may lead to conflicts. We experienced this with *pbkrtest*. In case you suspect that this is the case, please try to install the newest versions of the packages for the appropriate R version. You can do this by running the following line in R:

```
update.packages()
```