

Appendix B -- Use of PM if the primary computer is a Mac

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The originators of PedigreeMaster designed it to work with computers using Windows. However, this does not preclude Mac users from working with Pedigree Master. For Mac users, there are several options:

1. Running Windows Programs on Macs via Partition Programs or Virtualization Software
2. Obtaining a used or low-cost PC that can run Pedigree Master
3. Contracting with a NSIP Data Processor

Each of the above options has advantages. The best option for your flock depends on your needs, knowledge, patience and current computer hardware and software. Also, as operating systems and PM software change, some of the information on compatibility and features may change. While this does entail some added costs, the benefit from improved genetics will more than cover the investment.

Option 1 – Running Windows Programs on Mac can be affected by how much extra room you have on your hard drive and how you use your computer. Programs that can satisfactorily run Windows programs on a Mac include Parallels Desktop, VMware Fusion, Boot Camp and 2-3 free ware programs. The choice of software is up to you, however several producers have reported good results using Parallels. As Mac operating systems upgrade, an upgrade in the previously mentioned software will likely be necessary as well. Pedigree Master does not require the latest versions of Windows and thus upgrades of the previously mentioned software may not be needed if it is to simply get a new version of Windows. Viruses should not be an issue if you use a Mac email program and web browser to send to Australia and to receive data. Use a Mac browser to download your flock *.exe file after each data run for updating Pedigree Master. A problem that some users have encountered with the Yosemite version of a Mac is that the default program to open the zip file that is downloaded. If a problem is encountered, change the program that is used to download this file.

You also need to check the compatibility of the partition/virtualization program with the version of Windows you will run. Compatibility varies between the different programs, different versions of the program and the version of Windows. For example, recent versions of the Bootcamp utility requires Windows 7 or later. Parallel can run with Windows XP, 7.0 or 8.0. Make sure you factor in the cost of purchasing Windows. To run Pedigree Master, you will not need the most recent Windows and can probably find used legal copies on the internet.

A recommended way to enter data into a Mac is to use a spreadsheet program. This is particularly helpful if you are using a sheep management program that typically allows you to import your data into a spreadsheet. Information on using a spreadsheet to enter data into PM is included in Chapter 4 of this manual.

In regard to running partition programs, the main one used is Bootcamp. It is a utility program that currently comes as part of the more recent MAC OS. Boot up with either the Mac OS or Windows – you can't run both at the same time. First, be sure to backup your hard drive. The install Bootcamp, then install Windows. When that is done, install Pedigree Master.

Virtualization programs allow simultaneous running of Mac OS & Windows OS. Some also allow drag and drop. As for types of virtualization programs, Virtual Box is freeware while Parallel 9 is less than \$100 and Parallel 8 is even cheaper. Some NSIP Mac users prefer Parallel as they don't have to shut their Mac down to run it and they like the drag and drop. Another

type is VM Ware – VM Fusion is the software and there are freeware copies. A discussion on software to run Windows programs on a Mac, and the implications, is available at: <https://www.macworld.co.uk/feature/mac-software/best-virtual-machine-software-3671133/>.

Option 2 -- Buying or obtaining an older, used PC is another option. These should be available for a minimal price or perhaps or sometimes obtainable from family or friends might even. The PC needs to be of sufficient capacity to run Windows XP or later versions. The newest versions of Window are not necessary to run Pedigree Master. Typically, the only function for this machine is to run PM, thus they can be streamlined for this function and thus provide adequate speed and capacity. PM works with either 32 bit or 64 bit machines. Since you don't need to hook the PC up to the internet, you don't need to purchase virus software. Download the PM installation program with your Mac and use a jump drive to ferry installation material from your Mac to the PC. After creating a file for submission to LambPlan, as described in Chapter 5 of this manual, ferry the file from the PC to your MAC to email it to LambPlan. Also download PM updates to the Mac and then ferry them to the PC.

Option 3 -- Using a data processor consists of hiring a person familiar with PM to handle the aspects of working with PM on a PC. The process starts with the Mac user entering the data on an Excel spreadsheet or exporting it to Excel from a sheep management program to Excel. The spreadsheet would then be emailed to a data processor. A list of current data processors is online at: <http://nsip.org/data-processors> and their fees vary. The data processor would import the spreadsheet into Pedigree Master, validate the data and return any error messages or validation needs to the flock. The data processor then emails the file for submission back to the MAC user who then would email the file to Lamb Plan. After the data is processed, the data processor can update the participant's PM files and export EBVs to an Excel File to be mailed to the Mac user, although there is generally little need of this because LambPlan sends reports to each participant with EBVs of the main traits of interest. Or, some producers hire others to put the data onto a PC directly. Contact NSIP if you would like a list of data input contractors.