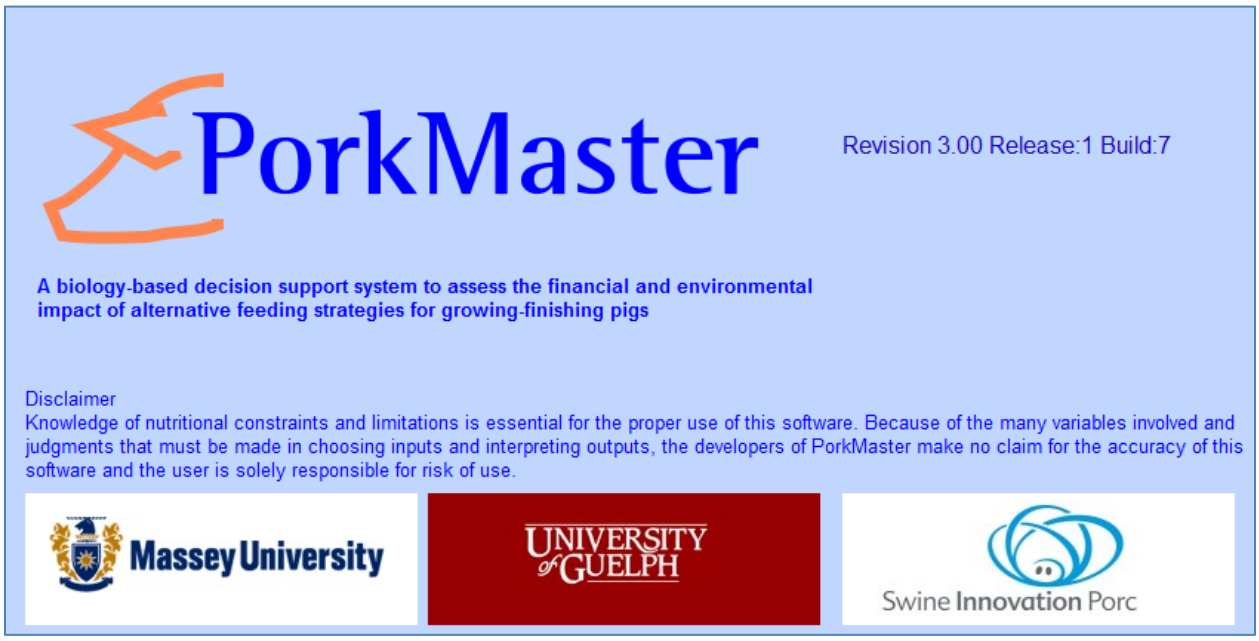
General Overview & User Guide

V1.4 April 29, 2013



What is Porkmaster?

Porkmaster is a computer program that can be used to evaluate the environmental and financial impact of alternative management and feeding strategies for individual growing-finishing pig units. The core of the program is a biological pig growth model that simulates nutrient utilization and growth performance of groups of growing-finishing pigs. The program also includes: (1) an adjustable ingredient data base, (2) a least cost feed formulation system, (3) an adjustable data base of diet compositions and costs, (4) an adjustable data base of carcass grading systems, (5) routines to evaluate current growth and financial performance based on feed intake and growth curves, and (6) a decision support system that will allow users to identify the most profitable management strategy among a large number of stored outputs from the biological pig growth model. These modules are all integrated to compare model simulated to observed growth performance, evaluate feeding programs, and assess how profits and nutrient utilization can be improved by altering pig performance potentials, diets, feed intake levels, and strategies to ship pigs for slaughter.

The program operates in a Microsoft™ Windows environment. The program includes an extensive help menu that includes definitions of the various terms that are used in the program.

Porkmaster is developed by the international pig growth modelling collaboration between Massey University in New Zealand (Moughan, Morel et al.) and the University of Guelph in Canada (de Lange et

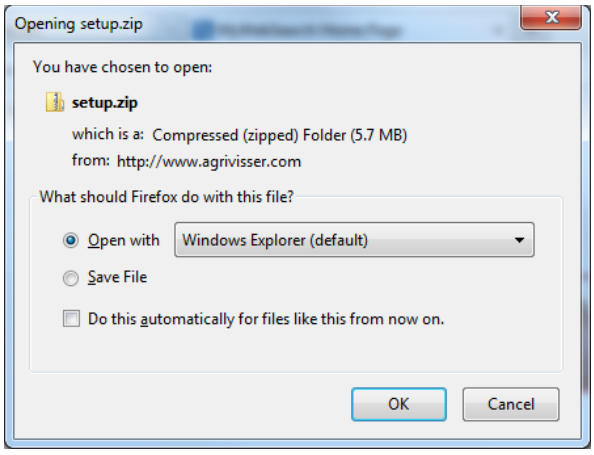
al.). This modelling group has been actively involved in pig growth model development for more than 20 years. Many aspects of the biological pig growth model have been published in the scientific literature. Key publications are listed at the end of this document.

The most recent version of the program has been programmed by A. Visser (AgriVisser.com) and was developed with financial support from Swine Innovation Pork in Canada and scientific input from Dr. H. Martinez.

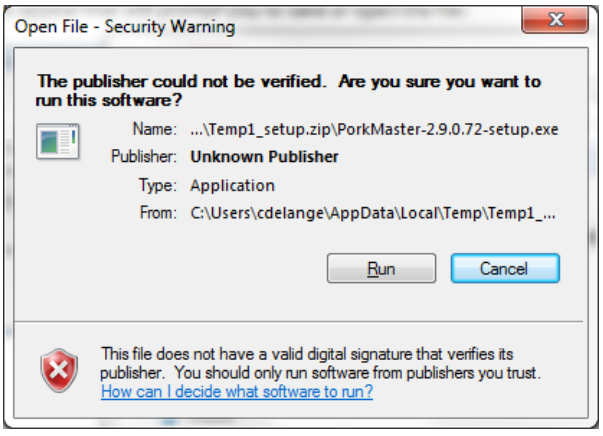
Installing Porkmaster on your computer

You can download the program from: www.AgriVisser.com/download/setup.zip

Simple, copy this link into your web browser and select 'Enter' on your key board. Depending on the type of browser a window will appear that will prompt you to save or open the file:



Simply, select 'Open', and click 'OK'. A new window will then open with a file named 'PorkMaster-2.9.-.xx-setup'. You can either copy or save this file to know location on your computer, or double click on the file name to initiate installation. When installation has been initiated the following window with a security warning message will appear:



Simple click on 'Run' and follow the prompts in the various screens.

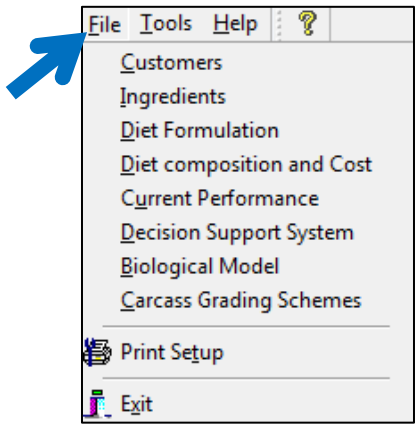
After installation, the program needs to be registered to make it operational. To do this, open the program, and in the main menu at the top of the window select *Tools*|*Program status* and complete the information in the data entry fields of the registration form. The copy and paste the screen with the registration form into a word document (using 'Ctrl' + 'Print Screen' keys, opening a new word document and use 'Ctrl' + 'v' keys, save the word document) and e-mail it to Ane@AgriVisser.com. The release code will then be e-mailed to the address in the registration form.

Once the release code has been received, enter it into the registration form and click on the unlock button at the top of the window: . The program status will then change to 'Licensed to User'. You are now ready to use the program.

Notes:
- In some instances the program may become locked. This occurs when you connect external hard drives or other devices to your computer, which changes the computer User ID. Either remove these devises or request another release code to unlock the program.
- When reinstalling the program or installing updates, data files are not updated. If you wish to update date files delete or move the directory Porkmaster, within the directory Documents, before installation.

General overview and use of the program

The main modules of the program, as well as data base used to store information (organized under *Customers*), can all be accessed by clicking on *File* in the main tool bar that is always displayed at the top of the window:



In each of the modules data can be entered, saved and, when appropriate, calculations can be executed. Results can be displayed in printable reports or presented graphically to allow easy interpretation.

Data are stored hierarchically. The highest level is the Customer. Every Customer can have one or more datasets to store ingredients and diets, current performance data, and sets of inputs for the biological mode. To set up a customer, select *File*|*Customer*, and enter a new name, enter data and choose save.

When you select *File*|*Ingredients,* you can access the large ingredient base from NRC (2012). Nutrient profiles in ingredients can be altered and new ingredients can be generated. The information can be saved for the various Customers.

When you select *File*|*Diet formulation,* Porkmaster can be used to least cost formulate diets using the ingredients from the NRC (2012) data base or new ingredients that are stored in the ingredient data base. Diets can formulated based on the lowest cost per tonne of feed or lowest cost per unit of energy, whereby all nutrients and the inclusion level of a premix are all balanced against energy. Diets can be saved and exported to *Diet composition and Cost*.

When you select *File*|*Diet composition and Cost,* you can access nutrient profiles and costs of diets that are generated in the diet formulation systems. Nutrient profiles and costs of diets can also be copied, edited and entered directly, bypassing the diet formulation routine. Diets that are formulated or edited here are saved for individual customers, and are called *User Diets*. In this module you can also access nutrient profiles of diets that are considered in the *Decision Support System*. For these so-called *System Diets* only prices can be changed.

When you select *File*|*Current Performance*, Porkmaster allows you to obtain estimates of growth rates and feed intake at the various stages of growth, as well as the financial performance on the current feeding program. This is based on observations on representative groups of pigs that are fed diets that are stored as *User Diets* or *System Diets*.

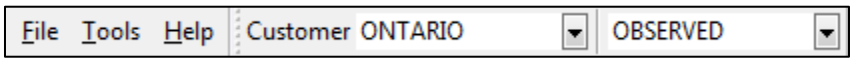
When you select *File*|*Decision Support System*, Porkmaster can be used to identify the best feeding level, and the best diets over specified body weight ranges, as well as the best slaughter body weight from a number of options that are made available to the user. For these analyses only *System Diets* can be used.

When you select *File*|*Biological Model*, Porkmaster can be used to predict growth performance of pigs, based on pig type, diet compositions, feeding schedules, and strategies to ship pigs for slaughter. You can define values for model inputs and interpret aspects of nutrient utilization and growth on a daily basis using graphs and user-defined reports. Based on the technical performance, economic performance is estimated as well. For these analyses *User Diets* and *System Diets* can be used.

The option *File*/*Carcass Grading Schemes* is global to the program. It allows you to enter carcass grading schemes, which can be used to evaluate current performance, and alternative management strategies.

At the top of each window you can select the *Customer* and the Scenario (e.g., ingredient, diet,

economic data, performance data, or inputs for the biological model) within each *Customer* using pull down menus:



The action buttons at the top of the window will vary somewhat between modules:

 Create new scenario, clearing all data entry fields

 Safe current scenario

 Safe (altered) scenario under a new name

 Delete current scenario

 System ingredient or diet

 User (defined) ingredient or diet

 Refresh ingredient prices

 Formulate Diet

 Store as *User Diet* in *Diet Composition and Costs*

 Execute calculations

 Reset; undo calculations

 Review general pig performance data

 Review economic data

 Review feed usage data

 Review body weight data

 Compare model predicted with observed performance

 Review report

 Clear report

 Safe report as PDF

 Print report

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