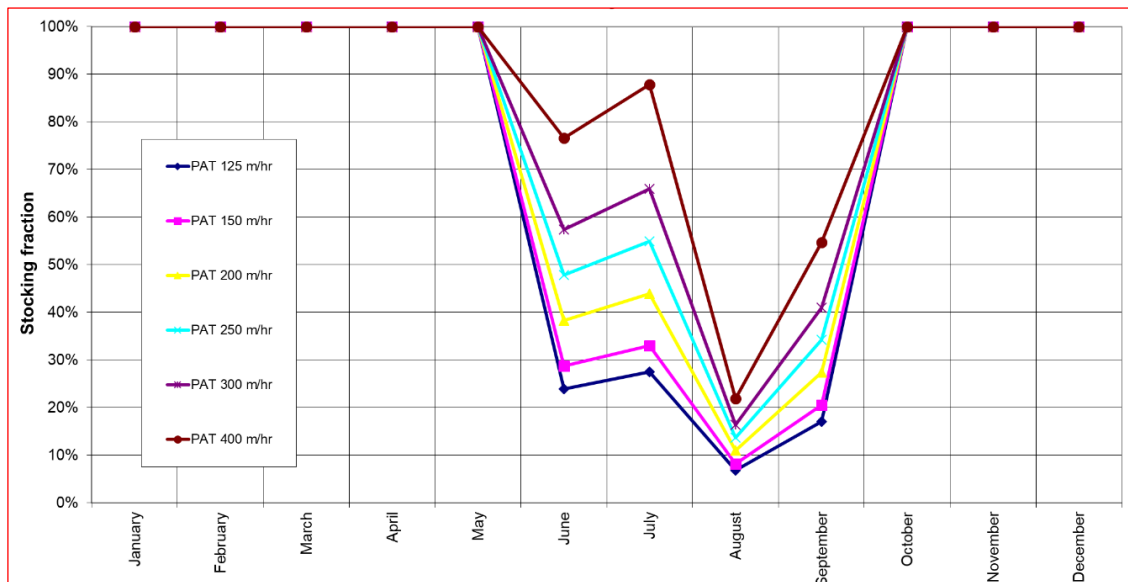# Re: The HSRA issue paper - HotStuff Program

It is my view (and a view that is shared with many others that frequently use the *HotStuff* software), that even the current version is highly flawed in numerous areas. As this program is to be used as a basis for all stocking density calculations I believe that it is critical that it is thoroughly overhauled before its use is extended to a probability of stress rather than probability of mortalities. The program should be robust, easy to use, enable prediction and produce consistent results which currently is not the case.

Problem areas include:

1. Small variations in proposed shipping weights and arrival date can lead to large changes of stocking density requirements by thousands of animals (ie parameter changes are stepped rather than graded leading to hard margins that cause large changes when margins are breached). This means that the program cannot be used as a prediction tool as variations are too great and therefore impractical.

2. Usage of limited and outdated weather data - this can be seen clearly in McCarthy's report when the graph generated from the *HotStuff* program shows that July conditions allow higher stocking densities than June.

Source: McCarthy Review Figure 1 p17

3. The *HotStuff* program is highly cumbersome to use and cannot be used practically in a real-life situation. Software crashes and inconsistencies are a common occurrence. For example, the same data can provide different results depending on the computer being used.

4. Since the ventilation review, each vessel now has Port PAT and a Sailing PAT. No clear instructions have been provided by the program developer or DAWR as to how this is to be used.

It is essential that the basic program for all other calculations is corrected before meaningful data can be attained. The use of a flawed program may lead to a situation where densities are such that the export during summer months makes export unviable and therefore make sheep export to the middle east unviable for Australian exporters.