

HemavetCSV: Creating a Summary File from a Directory of Hemavet Files

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Overview. HemavetCSV is a Windows program that creates a single comma-separated values (CSV) file with summary information from a directory of Hemavet files. This summary CSV file can be directly opened using Excel for data analysis, or imported into other analysis or database programs.

This program has only been developed for, and tested with, the Hemavet 3700 automated blood cell analyzer from Drew Scientific (http://www.drew-scientific.com/products_home.htm).

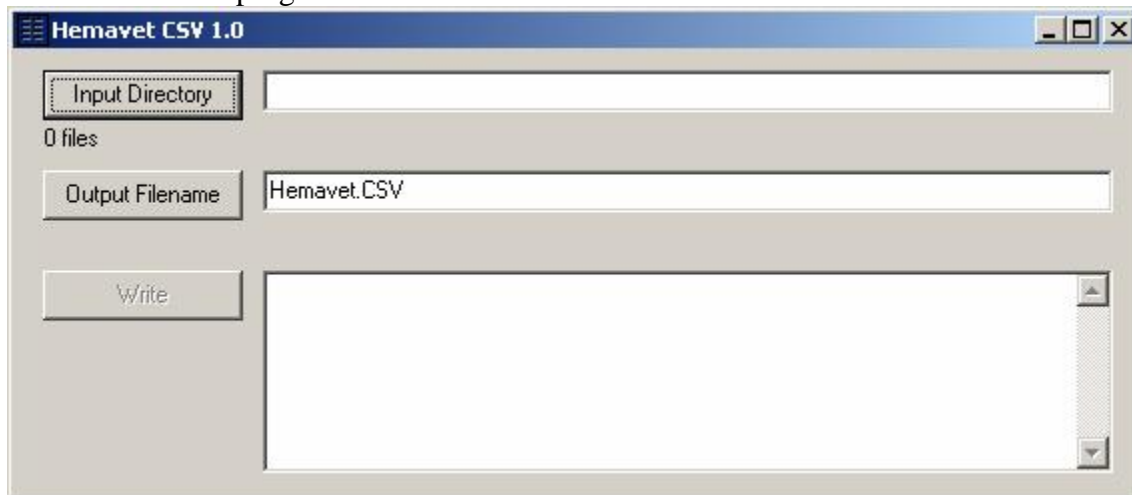
License. The HemavetCSV executable and source code are available under the [GNU General Public License](#). The program is free for non-commercial purposes.

Installation. The program HemavetCSV.EXE can be copied to any directory. If you'd like an icon on your desk top to use this program, create a shortcut to the program by right-clicking-on the icon for the EXE file and dragging it to your desktop. Then select "Create Shortcut here".

How to use the HemavetCSV Program. Start the program by double clicking on the program's icon:

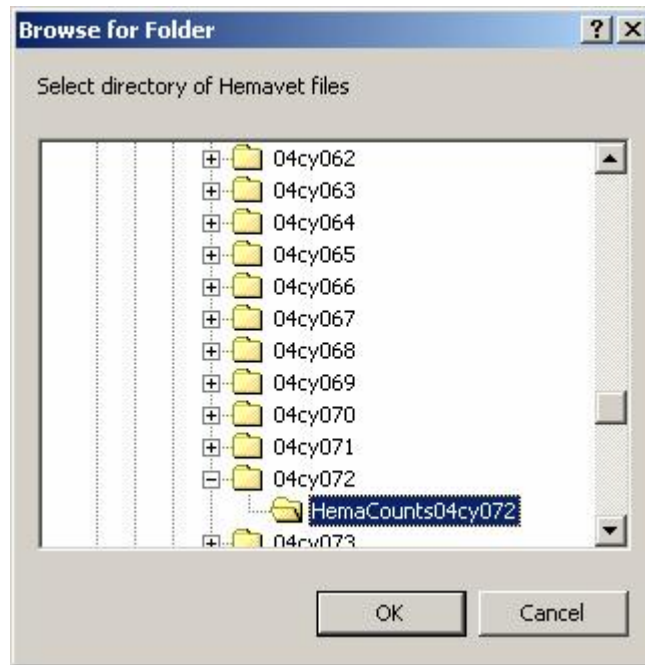


The first time the program starts the screen looks like this:

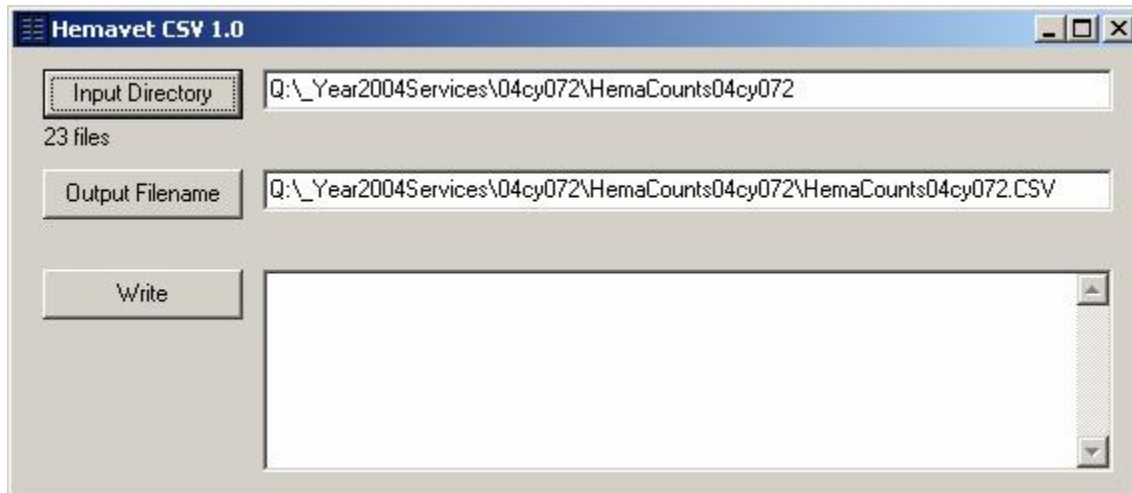


The *Write* button is not available because no *Input Directory* has been specified. Press the *Input Directory* button to specify this directory containing Hemavet files, for example:

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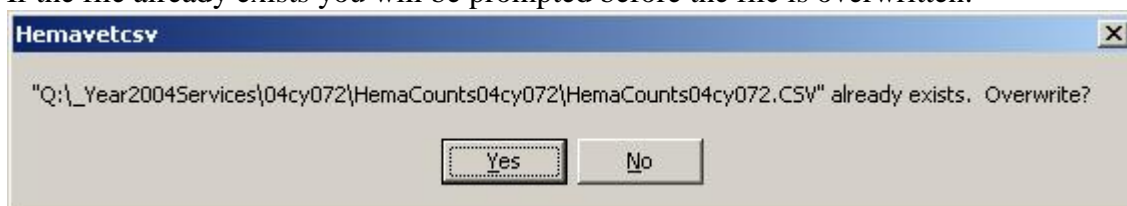
This directory is assumed to contain only Hemavet data files, or CSV files from earlier HemavetCSV runs. Press the *OK* button.



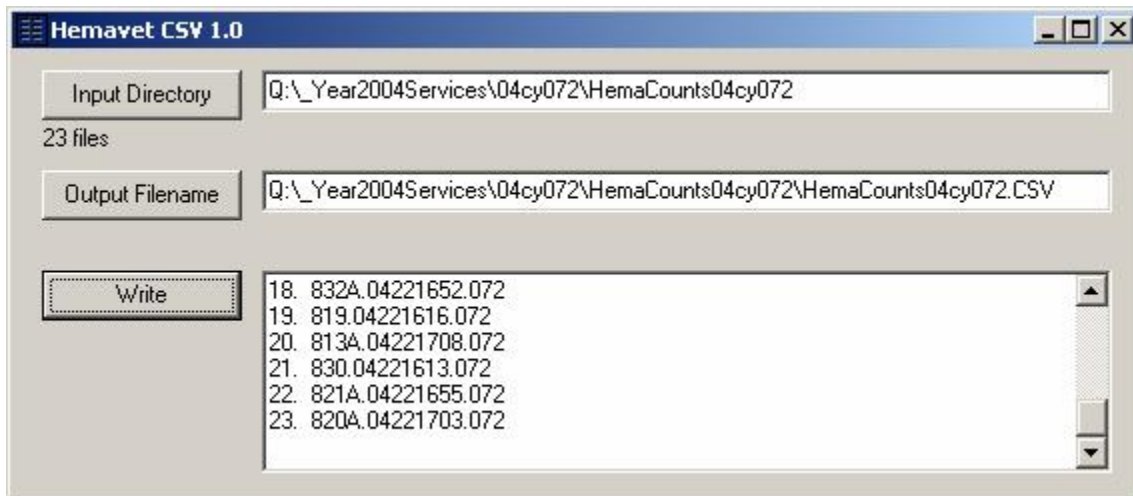
The default output filename is a file XXXXXX.CSV where "XXXXXX" is the directory name, as shown above.

Press the *Write* button to create the CSV file.

If the file already exists you will be prompted before the file is overwritten:



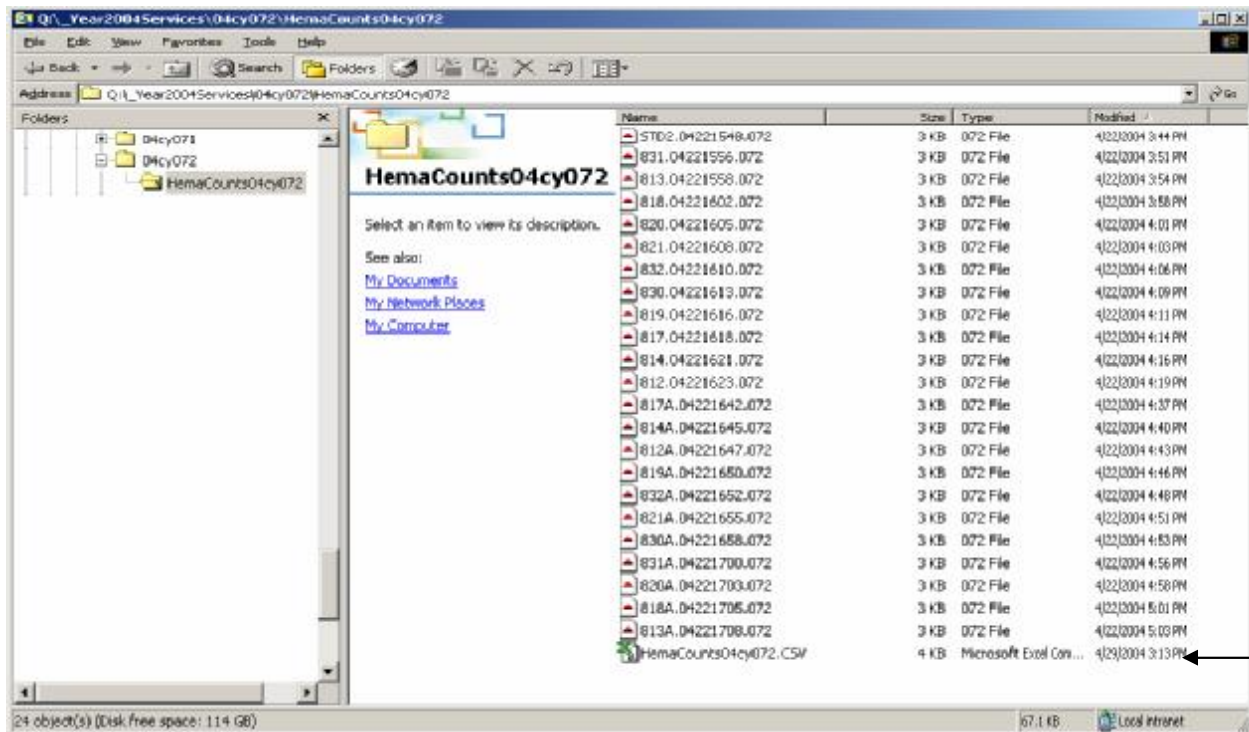
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As each Hemavet file is processed, its file number and filename are shown in the memo box. (Remember: Any CSV files in this directory are ignored to avoid a conflict between input and output files.)

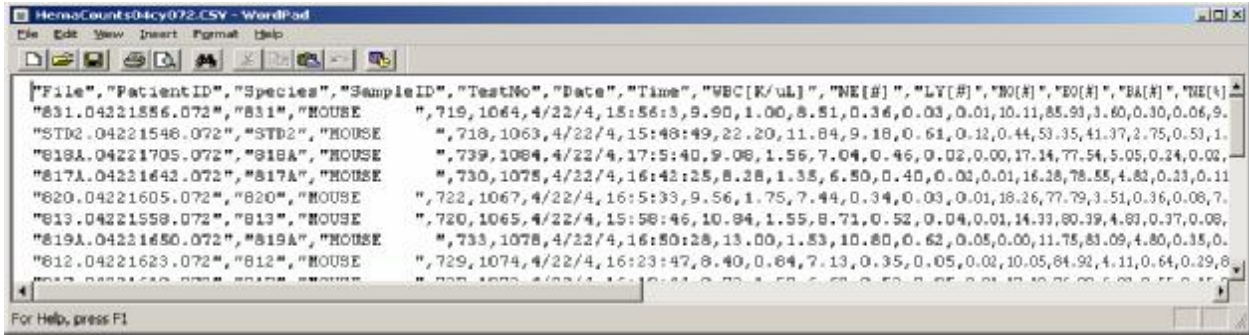
An overall understanding of the proprietary Hemavet files was taken from a phone call with Tom Sjordahl, Drew Scientific, on 27 April 2004, and reverse-engineering of observed files. As far as I know, there is no written file specification. Therefore, the program is quite rigid and enforces a number of assumptions.

The HemavetCSV program will complain about and ignore any file that doesn't start with a "sf", end with an "ef" and have exactly 186 lines. (See the Appendix for an example file).



The CSV file will look like this if opened in WordPad or a similar ASCII text editor:

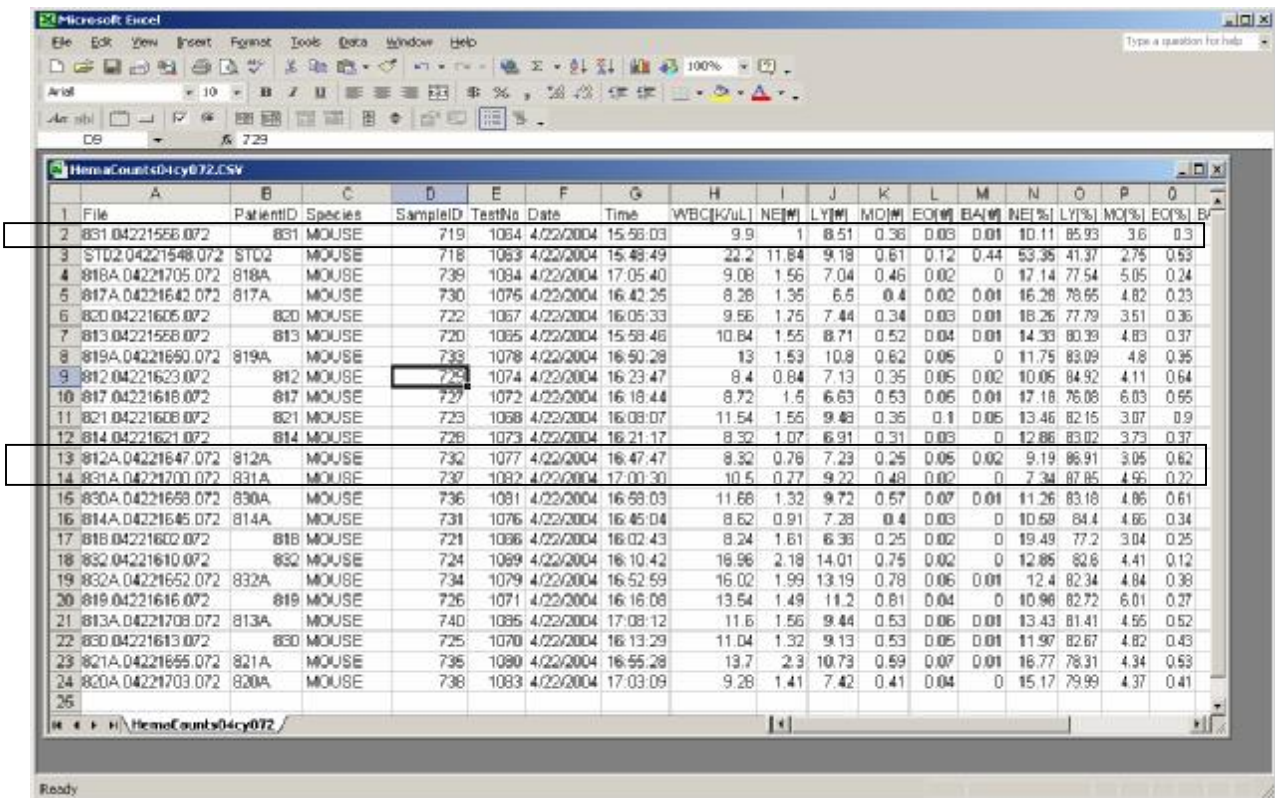
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Excel. Normally Excel will directly open CSV files if you just double click on the file's icon from Windows Explorer.

With the whole spreadsheet selected (click on box above "1" and to the left of "A") format the columns to fit:

Format | Column | AutoFit Selection



Note the column headers in Row 1 show the same value names and units as shown in the Hemavet report.

The sample report and corresponding Hemevet file for the row for PatientID 812A is shown in the Appendix.

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Excel is a bit brain dead since it can't figure out by default that all the PatientIDs were not numbers. Also, Excel doesn't preserve the display precision of the numbers on import – perhaps someday Microsoft will understand how to treat significant digits in scientific data correctly. The values didn't change when the data are imported, however, Microsoft changes the number of significant digits displayed when numbers end in 0s.

Configuration file. For user "xxx" the file HemavetCSV.INI is stored in this directory
C:\Documents and Settings\xxx\Local Settings\Application Data\StowersInstitute\HemavetCSV.

The file can be deleted at any time since it's only used to remember the last directory processed.

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Appendix: Sample Hemavet Report

HEMAVET Extended User Interface

Patient ID : 812A	Species : MOUSE
Sample ID : 732	Test No. : 1077
Date : Apr 22, 2004	Time : 16:47:47

WBC

WBC	K/uL :	8.32		
	#		%	
NE	0.76		9.19	
LY	7.23		86.91	
MO	0.25		3.05	
EO	0.05		0.62	
BA	0.02		0.24	
NRBC				
WBC Suspect				

RBC / PLT

RBC	M/uL	8.74	MCV	fL	47.9
HB	g/dL	12.8	MCH	pg	14.6
HCT	%	41.9	MCHC	g/dL	30.5
Retic	M/uL	---	RDW	%	16.8
Retic	%	---			
PLT	K/uL	1080	MPV	fL	4.4 L
PCT	%	---	PDW	%	---
RBC Suspect			PLT Suspect		

All numeric values shown in the Hemavet Report, and included in the Hemavet data file (see next page) are included in the CSV file that is created. Flags, such as the "L" shown above with the MPV value, are ignored in the CSV file.

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**Appendix:
Sample Hemavet
Data File
Corresponding to
Above Report**

*Values of interest from
the report are circled.*

sf

OPRID = 0
SEQNUM = 732
TESTNUM = 1077
HOURS = 16
MINUTES = 47
SECONDS = 47
MONTH = 4
DAY = 22
YEAR = 4

SPECIES = 6
WBCTHLD = 2721
RBCTHLD = 1500
PLTTHLD = 170
MCVTHLD = 879
OPRID = 0
OPRID = 0
OPRID = 0
OPRID = 0
OPRID = 0
OPRID = 0
OPRID = 0
OPRID = 0
OPRID = 0
OPRID = 0

ISPEC = "MOUSE"
00000: 832
00001: 874
00002: 128
00003: 419
00004: 479
00005: 146
00006: 305
00007: 168
00008: 1080
00009: 44

00010: 0
00011: 0
00012: 0
00013: 1248
00014: 8691
00015: 305
00016: 919
00017: 62
00018: 24
00019: 1005
00020: 0

00021: 104	00014: 305	00007: 0
00022: 723	00015: 384	00008: 0
00023: 25	00016: 535	00009: 0
00024: 76	00017: 62	00010: 94
00025: 5	00018: 24	00011: 321
00026: 2	00019: 68	00012: 701
00027: 84	00020: 0	00013: 1508
00028: 0	00021: 0	00014: 1000
00029: 120	00022: 0	00015: 1508
00030: 10	00023: 0	00016: 3795
00031: 0	00024: 0	00017: 5000
00000: 49152	00025: 0	00018: 3000
00001: 49152	00026: 0	00019: 4287
00002: 49152	00027: 0	00020: 0
00003: 49152	00028: 0	00021: 0
00004: 49152	00029: 0	00022: 0
00005: 49152	00030: 0	00023: 0
00006: 49152	00031: 0	00024: 0
00007: 49152	00000: 107	00025: 0
00008: 49152	00001: 2241	00026: 0
00009: 49664	00002: 4686	00027: 0
00010: 512	00003: 5674	00028: 0
00011: 49152	00004: 9117	00029: 0
00012: 512	00005: 19466	00030: 0
00013: 0	00006: 0	00031: 0
00014: 49152	00007: 0	ef
00015: 49152	00008: 0	
00016: 49152	00009: 0	
00017: 49152	00010: 175	
00018: 49152	00011: 4867	
00019: 0	00012: 7407	
00020: 512	00013: 9438	
00021: 0	00014: 13736	
00022: 49152	00015: 16500	
00023: 49152	00016: 18000	
00024: 49152	00017: 33430	
00025: 49152	00018: 50000	
00026: 49152	00019: 8991	
00027: 0	00020: 0	
00028: 512	00021: 0	
00029: 49536	00022: 0	
00030: 49536	00023: 0	
00031: 257	00024: 0	
00000: 1070	00025: 0	
00001: 39	00026: 0	
00002: 7702	00027: 0	
00003: 689	00028: 0	
00004: 482	00029: 0	
00005: 9	00030: 0	
00006: 0	00031: 0	
00007: 0	00000: 109	
00008: 0	00001: 500	
00009: 2	00002: 630	
00010: 224	00003: 977	
00011: 120	00004: 1442	
00012: 6867	00005: 2000	
00013: 1824	00006: 0	