Tips for quantitative integrations:
(summarized by YB, June 2003, updated March 2008)

Acquisition hints for quantitative integrations:

Measure the longest T_1 and use $5*T_1$ for the recycle delay
Use a large sw to get a flat baseline
Center your data in the middle of the spectrum (o1)
Acquire a large number of dots (TD)
Make sure the signal-to-noise ratio is high (NS)
Use an optimal AQ time (fid going to zero at ~1/3 of the screen)
For decoupled measurements of X nuclei – AVOID NOE effects
Repeat for a few different independent measurements

A recent reference giving more details, and recommending ^{13}C decoupling:
***J. Nat. Prod.*, 70** (4), 589 -595, 2007
Here is their list of "Factors" for quantitative NMR (qNMR) as opposed to the "normal survey proton NMR."

(1) Don't spin, do shim (really well)
(2) Remove the ^{13}C satellites by decoupling
(3) Relaxation delays so that, in Bruker-speak, aq + d1 $\geq 5*T_1$
(4) Spectral windows with about 2 ppm extra on each side of the data
(5) Transmitter positioning to center the data
(6) Pulse width selection to calculate the optimal pulse width according to the Ernst angle: cos(PWopt) = exp(-aq/T1), where aq < T_1
Note: usually d1 = 0, but time is needed to minimize heating
(7) Acquisition time with enough points to ***i)*** meet the Nyquist frequency condition, and ***ii)*** get a digital resolution of ~ <0.2 Hz/pt
(8) Select sufficient repetitions, number of shots, for good si:no ratios
(9) Receiver gain settings should be optimized: automatic is fine
(10) Steady state: use dummy scans (ds) to establish an equilibrium
(11) Set the ^{13}C decoupling bandwidth and position with care

Processing hints for quantitative integrations:

Do not use a window function, just do a straight fourier transform
Be sure that the baseline is flat on both sides of the
Include the ^{13}C satellites in the integration
Adjust the slope and bias of the integration
Use the same limits of integration for all spectra
(i.e. wmisc→ intrng, rmisc→intrng)
Use the same scale for all the integrations ("lastscal")
Use deconvolution software, if lines are not resolved