GOING TOTALLY METRIC

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A few years back at a meeting such as this I made a presentation on this subject and did not make many converts. Now, here it is again. First off, I am not going to attempt to convert anyone from their tried and true beliefs in using English units in fish culture. That must be decided by the individual.

First off, let's look at some comparisons between the English and metric systems. What measurements are we using now in fish culture?

Fish measurements: length in mm
weight in number per pound
total pond weight in pounds
condition factor using inches and pounds

Pond measurements: dimensions in feet
volume in cubic feet or gallons

Water measurements: cubic feet per second
gallons per minute
temperature in F
dissolved oxygen in mg/l

Feed measurements: pounds per day
50 lb bags per day

Treatment methods: mg/l in water
parts per million in water
grams per 100 lb of fish

The foregoing list is not complete by a long shot. Fish culturists, the world over, are unique individualists. There are about as many ways of doing a single task as there are fish culturists - particularly those who are in my age group.

Before I get too deep into this, I would like to point out that there are but two things which must be changed on a fish hatchery for the entire system to go totally metric. Think of it, just two - and one of them does not cost a cent! One is replacing all the English unit weighing devices - scales or balances or whatever they are called - with metric weighing devices, preferably battery-powered digital affairs rather than the spring-operated ones. Now for the "kicker", the cheapest and yet the hardest thing to change is the mind-set. The fish culturists must want to change and must think

metric - not think metric and translate it into English. It is like being bilingual or even moreso. Such a person thinks in the language and does not mental translations into his/her native language. The main reason for this is that a lot is lost in translation back and forth. The same is true for converting from English units to metric units and back again. Statisticians call this "rounding error". I call it "rubbish" and "nonsense". It's rounding error, alright - error of the grossest form.

The best "proof of the pudding" I can think of for going totally metric is the sensitivity and the simplicity. At thin point I must ask the "Doubting Thomas's" to sit back and enjoy. There will be plenty of holes for you to put your fingers into.

Fact: 1.0 gram is 1/454th of a pound.
1.0 ounce is 28.3 grams
1000 grams are 1 kilogram
1.0 kilogram is 2.2 pounds

Question: Which weighing system provides the greatest sensitivity and accuracy? It seems that fish can be weighed individually or collectively to +/- 0.1 g but only, perhaps +/- 0.25 ounce (+/- 7 g). One concern frequently stated by fish culturists is not being able to know +/- 15-20% what is in the pond. I think using a weighing method which provides the best sensitivity would reduce this concern.

Next, let's take a look at administering chemicals in the water and antibacterials in the feed. The recommended dosages for the majority of water-administered chemicals for treating diseases are either as mg/l or parts per million (ppm). But a few are as a dilution; e.g., formalin is administered at 1:4,000 - 1:6,000. The conversion of mg/l to whatever English unit value has been responsible for the deaths of many fish. So, what's the big deal about not going metric? If the ponds were measured in meters and the volume multiplied by 1,000, the result would be liters. If the water inflow in cfs were to be divided by 28.32, the result would be liters per second (lps). Now, the dosage calculation is quite simple.

On administering antibacterials in the feed, the process is not quite so complicated - but it is, nonetheless, complicated. Fish are fed so many grams per hundred pounds of biomass. The correct dose must be calculated as feed fed, which is so many pounds per hundredweight of fish. Why not keep it all in the same units and simplify the process, plus making it less expensive and more effective.

In summary, please give what I have said some thought. I speak from my own experience that going totally metric fish culture has made things much less difficult and stressful. It did take some time, though. As I said earlier, it is like speaking another language. So long as one thinks in his/her native tongue and speaks the other language, they will never master the nuances of the new language. They will continue to be frustrated switching from one to the other. So, I think the place to begin is to be convinced that it can be done and then do it.

ENGLISH-METRIC CONVERSIONS

464 GRAMS ..... 1.0 POUND

1.0 KILOGRAM ..... 2.2 POUNDS

1.0 KILOGRAM ..... 1,000 GRAMS

1.0 GRAM ..... 1/454 POUND

1.0 GRAM ..... 1/28.4 OUNCE

1.0 METER ..... 39.37 INCHES

1.0 CUBIC METER ..... 1,000 LITERS

1.0 CUBIC METER ..... 35.316 CUBIC FEET

28.32 LITERS ..... 1.0 CUBIC FOOT

3.8 LITERS ..... 1.0 GALLON (US)