

### *Macadamia Density discussion with Len Hobson*

Dear Mark,

This approach considers various Cash Flows at different plant populations and comes up with the ideal and highest internal rate of return (IRR) when correlated to plant population and that turned out to be as near close to 800 trees per ha.

You can stick all this on graphs for clarity.

But first of all you must understand what I have termed “Tims Law’ after Tim Trochoulis from Australia. He did some brilliant work of the relationship of Tree Canopy Area to the Yield of NIS per Sqm Tree Canopy area. (The larger the tree grows the more tree canopy area and the more NIS the tree yields. –Provided there is space –increasing until trees fill the (hypothetical ha) of 10,000 Sqm per ha.) “Tim’s Law” he stated after many measurements turned out to be 0.8 kg NIS per Sqm tree canopy area) So now you have something to work on when you design for spacing of trees. You want to reach that magic figure of 10,000 Sqm per ha as soon as possible so you can harvest 0.8kg /sqm over the 10,000 sqm on your ha or get a Total yield of 8 Tons/ Ha.

Now this applies to the Integrafolias that everyone has been working on. But I have found the Beaumont’s will easily go to more and even up to the full 10 Tons/ ha with 100% canopy. But that is another story. Now to return to your best Integrafolia. You won’t better 8 tons/ha on Integrafolia and I agree with Philip that 3.8 to 4.5 Tons / ha is what SA achieves on Integrafolia orchards under commercial circumstances.

Now the other overriding issue when talking about spacing is what type of farmer are you talking to. When I drive onto a farm and find a bad road I immediately give him a discount of 25%! I know in advance that he will not follow my recommendations. So I will give him a planting distance that I know he will; 1. Be able to physically do and 2. Will then carry out the correct farming regime as it is within his grasp. I also tend to charge him more for my advice!!!!

Now for the excellent farmers –with excellent entrance roads—I will, after discussion, point out that he should look to the planting configuration that will give him the highest IRR over say 20 years.

I worked on one of our leading local growers experiences and come with 6m x 2.083’ m. Well the 6m rows still allows you go get in and when the trees touch you can transplant the 2.083 with a tree spade and make a new orchard. You then have 6m rows that the trees 4.2m in the row. Then you wait for the trees to start crowding to get your 10,000 Sqm tree canopy area and transplant the 6m trees leaving you with your 8.4m x 12 m rows with plenty of working space. Then you hedge the 8.4m rows ultimately.

I hope that gives you some food for thought.

Cheers

Len