In general, the Santa Catarina mussel farmers do not pay attention to the effects of crop density on productivity and profitability of their production. To evaluate these effects, 45 mussel culture ropes measuring 1 meter in length were made using a central cable and seeds 3 to 4 cm long, wrapped with a biodegradable tubular cotton mesh. Each of the densities of 300, 400 and 600 mussels/meter had 15 culture ropes. The ropes were weighed monthly and every two months three 33 cm samples were taken for counting and measuring all the mussels. The results did not indicate a better growth rate in the ropes with lower mussel density. Despite a control of the number of mussels sown, density control during a growing cycle is hampered by the constant entry of new mussels into the rope. The ropes with the highest density (600 m⁻¹) had a higher weight than the lower density ones (300 m⁻¹ and 400 m⁻¹) until the seventh month of cultivation, when they began to show losses by tipping. The commercial mussel yield after eight months of cultivation ranged from a minimum of 820g m⁻¹, which equates to 13.8% of the total weight of the rope in a rope with a density of 600 per meter, up to a maximum of 15.4kg, 64.4% of the total rope weight with the lowest density of 300 per meter. Combining the results of all densities tested, the average commercial mussel yield was 8.95 kg m⁻¹. The conclusion and recommendation to the producer is that he can grow mussels with densities as high as 600 m⁻¹, provided that he does not delay the harvest beyond eight months of cultivation, at the risk of observing large losses. If mechanized mussel seeding is available, it is recommended that he adjust the density between 300 m⁻¹ and 400 m⁻¹, that would provide the same productivity with lower risks.

**Key words:** Mytiliculture; Management; Profitability