



Assessing Potential of Novacq to Reduce Fishmeal Inclusion and Protein Content in local diets for Tilapia in Tanzania

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The Team

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The Experiment

- Aimed to assess effect of incorporating Novacq in local tilapia diets with less protein and less digestible ingredients
- Will tell whether Novacq is able to compensate for low protein content in diets typically used by subsistence tilapia fish farmers
- Tested diets had reduced protein content of between 25% and 20%, and Novacq was added at between 5% and 10%

...The Experiment

- Experiment units were tanks with a volume of 15 litres in a recirculation system
- The tanks were stocked with *Oreochromis niloticus* at a density of 6 fish/tank
- Ten (10) dietary treatments were randomly assigned to the tanks in four replications
- The fish were fed to apparent satiation three times daily (7-8am; 12-1pm; 5-6pm)

...The Experiment

Experimental Diets

	A	B	C	D	E	F	G	H	I	J
Ingredient	Control	5NQ	10NQ	Zero FM +0NQ	Zero FM +5NQ	Zero FM+10NQ	MP control	LP control	MP NQ	LP NQ
Protein (%)	30	30	30	30	30	30	25	20	25	20
Energy (MJ/kg)	17.6	17.4	17.2	17.4	17.3	17.1	17.8	17.8	17.4	17.5
Fishmeal (Tanz)	400.00	400.00	400.00	0.00	0.00	0.00	400.00	400.00	400.00	400.00
Cassava flour (Tanz)	300.00	300.00	300.00	300.00	300.00	300.00	300.00	300.00	300.00	300.00
Soybean (full-fat, Tanz)	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00	640.00	320.00	640.00	360.00
Cottonseed cake (Tanz)	920.00	920.00	920.00	1600.00	1600.00	1600.00	600.00	280.00	600.00	320.00
Blood meal	160.00	160.00	160.00	200.00	200.00	200.00	160.00	160.00	160.00	160.00
Maize	1040.00	840.00	640.00	672.00	472.00	272.00	1640.00	2240.00	1240.00	1720.00
Fish oil	40.00	40.00	40.00	80.00	80.00	80.00	40.00	40.00	40.00	40.00
Vitamin & mineral Premix	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00
Novacq	0.00	200.00	400.00	0.00	200.00	400.00	0.00	0.00	400.00	400.00
Methionine	20.00	20.00	20.00	28.00	28.00	28.00	20.00	20.00	20.00	20.00
CaHPO4	80.00	80.00	80.00	80.00	80.00	80.00	80.00	80.00	80.00	80.00
Soybean oil	0.00	0.00	0.00	0.00	0.00	0.00	80.00	120.00	80.00	160.00
Pellet binder	1	1	1	1	1	1	1	1	1	1
Total (g)	4000.00	4000.00	4000.00	4000.00	4000.00	4000.00	4000.00	4000.00	4000.00	4000.00

Current Status

- Conducted proximate analysis of ingredients used in feed formulation

No	Samples Name	% DM	% ASH	% CP	% EE	% CF
1.	Fish Meal	92.84	26.72	59.54	11.03	0.22
2.	Blood Meal	84.94	6.24	81.33	0.84	0.56
3.	Soya Bean Meal	89.06	6.21	46.09	7.29	4.56
4.	Cotton Seed Cake	90.19	5.08	32.13	6.27	15.23
5.	Cassava Flour Meal	87.37	1.37	3.18	0.42	3.43
6.	Maize `Meal	87.73	1.11	8.67	3.39	2.26

- Growth trial started on 12th July 2018. (Thursday).

Challenges

- Experimental diets had to be re-formulated after realizing unusually low protein content
 - Fish meal was suspected to be of low quality
- Difficulties in obtaining fingerlings with uniform size
 - Reduced stocking rate up to 6 fish per tank.

Reflections

- Need to establish reliable source of quality ingredients
- Need to produce our own fingerlings to ensure uniformity in size

Ideas for Follow-Up

- Other research area of interest is to explore use of Novacq in African catfish
- We have capacity for
 - conducting growth trials clear and green water
 - Undertaking proximate analyses

THANK YOU FOR YOUR
ATTENTION

PREPARED BY NAZAEEL MADALLA & AUGUSTINO JACOB.