

Table 20. List of commonly used binder, attractant and preservative used in formulated feed for tilapia

Common name	Chemical formula/composition	Brand name	Manufacturer	% inclusion		Reference
				Min	Max	
<b>Binder</b>						
Wheat gluten				4		
Wheat flour				15		Cruz (1997)
Polymethylolcarbamide		Aquastab		0.02-0.08		
Calcium lignosulfate		Lignobond 2X-US				
Ethylene/vinyl acetate polymer		Aquabind		1.5-3.0		
		PEGABIND	BENTOLI	0.1	0.15	Manufacturer
<b>Growth enhancer</b>	Sulfated D-galactans			0.1 mg/g body weight		Farias <i>et al.</i> (2004)
<b>Attractant</b>	Dimethyl-β-propiothetin					
	Citric acid			10 <sup>-6</sup> M	10 <sup>-2</sup> M	Xie <i>et al.</i> (2003)
	Metacetic acid			10 <sup>-6</sup> M	10 <sup>-4</sup> M	
	Lactic acid			10 <sup>-5</sup> M	10 <sup>-2</sup> M	
	Animal Protein Concentrates, Choline Chloride, BHT (added as a preservative), Amino Acids (Alanine, Argine, Betaine, Cystine, Glycine, Histidine, Isoleucine, Lysine, Methionine, Phenylamine, Proline, Serine, Theonine, Tryptophan, Tyrosine, Valine), Natural Attractans.	AQUASAVOR	BENTOLI	0.1	0.4	Manufacturer
<b>Immunostimulant</b>	Peptidoglycan	AJINOMOTO PG-AQUA	AJINOMOTO	0.01	0.1	Manufacturer
	Peptidoglycan	AJINOMOTO PG-AQUA	AJINOMOTO	0.02		Clark <i>et al.</i> (2000)
<b>Antioxidants</b>						
BHA	Butylated hydroxyanisole (BHA)				200 ppm	Rumsey (1980)
BHT	Butylated hydroxytoluene (BHT)				200 ppm	
Ethoxyquin	1,2 dihydro-6-ethoxy-2,2,4- trimethy quinoline				150 ppm	
<b>Antimicrobials</b>	Sorbic acid			0.1	0.25	Pathak <i>et al.</i> (1996)
	Propionic acid			0.1	0.25	
	Sodium benzoate			0.1	0.25	
Mycotoxin binder	Combination of alumino and other silicates, organic acids, their salts and surfactants	FIXAR S	BENTOLI	0.2	0.25	Manufacturer
Mold inhibitor	Combination of Propionic acid, its salts and salts of organic acids with sustained release excipients and corrosion retardants	AMONEX	BENTOLI	0.05	0.20	Manufacturer
<b>Hormones</b>	17 α methyltestosterone (for sex reversion)*			40 mg/kg feed	60 mg/kg feed	Various sources
<b>Preservatives</b>						
Propionic acid		Calprona C		0.5-2 kg/tonne		Cruz (1997)
Poly N-vinylbutyrolactam and sodium monmorillonite		Alfabind		2-4 kg/tonne		
Butylated hydroxytoluene		Dry-antox 125		125 g/tonne		

\*Approximate cost: US\$40-45/5g