

AQUAFORM[®] - A dietary organic acid salt as additive for aquaculture

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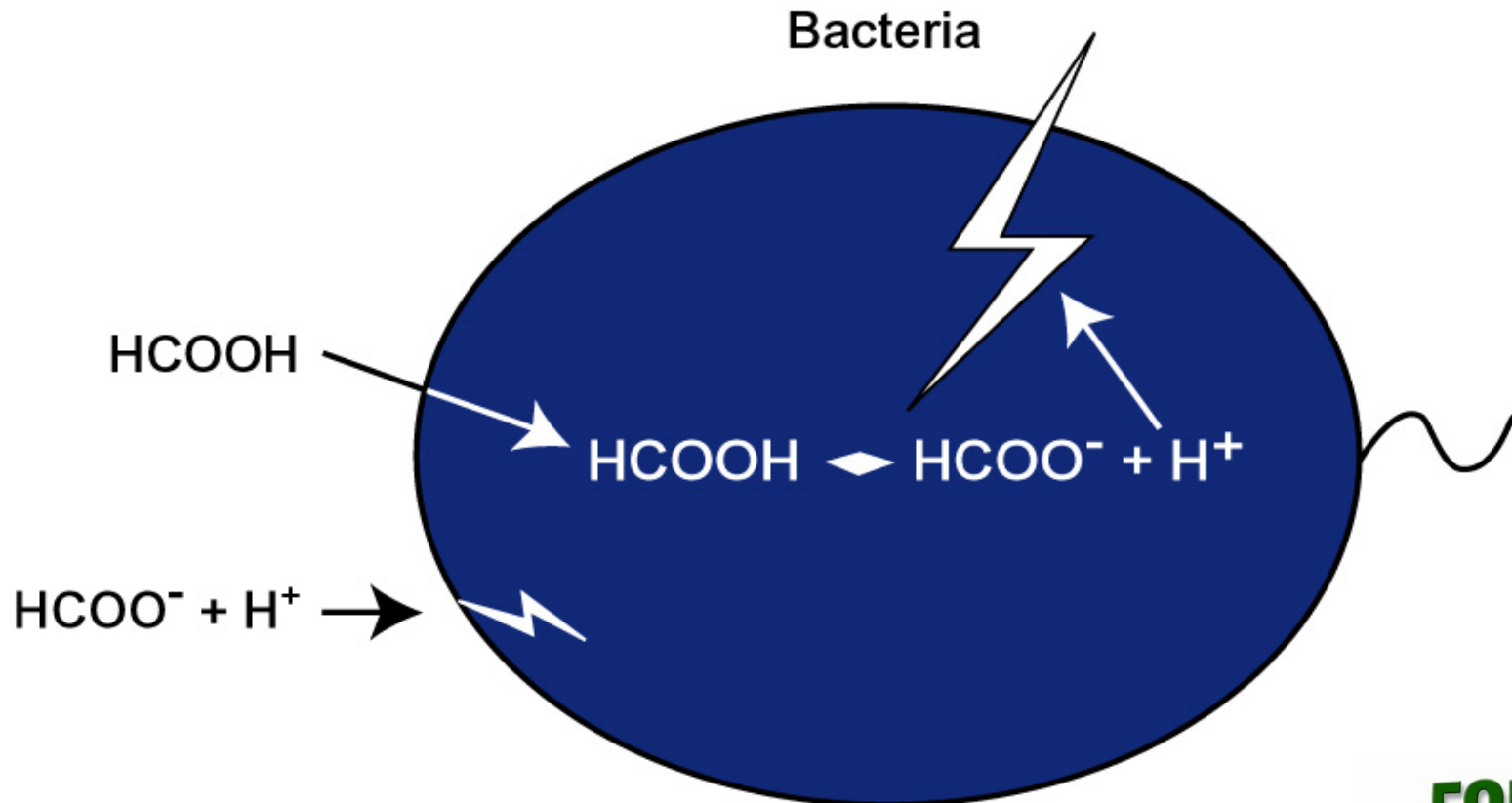


- Fish meal, plant-protein meals as well as grain prices are rising, or on a high level
- Economy and sustainability of “feeding fish” gets crucially important
- Fish growth and FCR are therefore key-factors

- Growing awareness from consumers and producers
- Use of antibiotic growth promoters (AGP) increases the risk of cross-resistances
- EU does not allow the import of aquaculture species which contain residues of AGP → chance for sustainable aquaculture

- creates unfavourable conditions for pathogenic bacteria
- reduces acid binding capacity
- helps digestion, mainly protein and minerals
- supports health
- increases performance

Organic acids inhibit bacteria growth – thereby preventing degradation of feed; healthy intestine



- Coming from the African lakes; introduced into Asia in the 1960/70ies
- “booming” fish in the last 10 years, due to its easy culture and the acceptance of Western markets
- Ca. 2.6 Mio t produced in 2008 (GROWfish), up from 500.000 t in 1995 (40% growth each year!)
- FAO forecast 2010: ca. 3.5 Mio t tilapia

- At a production of 2-3 Mio t tilapia, mainly in Asia, each year a significant amount of feed will be used
- Common culture practice: 120 days grow-out, with the first month on natural food (algae etc.), followed by supplemental feed
- So 75% of the fish growth is due to feed, with an FCR of 1.25 (250 g) to 1.75 (1 kg) the need for feed is at 3.4 Mio t every year!

- Long term toxicology studies
- No residues
- Efficacy trials in fish and shrimp
- Sensory examinations of meat
- No influence on environment
- Worker safety

FAMIQS


CERTIFIED

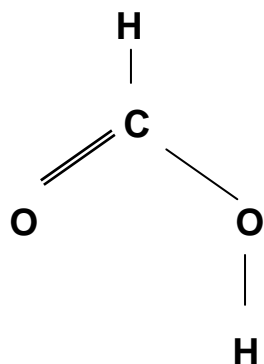
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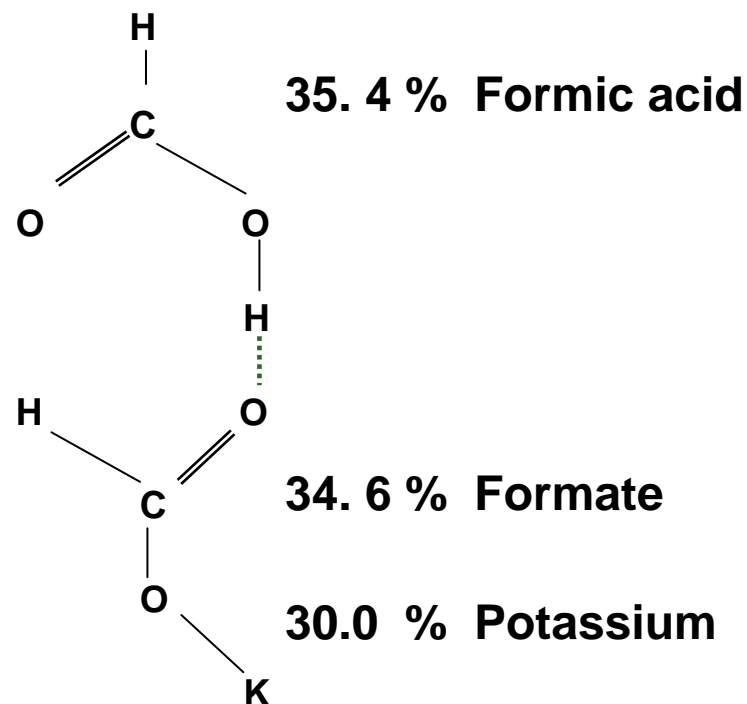
DANAK
Reg no. 5002

No toxicological risk

Formic acid



Potassium diformate (KDF)



- Fish***
- general growth increase (DWG, FI, FCR)
 - improved digestibility

- Fish***
- anti-bacterial effects (Vibrio, Streptococci, Aeromonas...)

- Shrimp***
- increased survival rates
 - optimized feed efficiency

- tilapia grow-out with bacterial challenge for 85 days (*Vibrio anguillarum* at day 10)
- initial fingerling weight: 16.7 g
- 0.2%, 0.3% and 0.5% KDF (AQUAFORM[®]) vs. negative control
- feeding 6 times a day (32% CP)

AQUAFORM trial with tilapia grow-out in Indonesia

	Control	2 kg/t KDF	3 kg/t KDF	5 kg/t KDF
Final weight (g)	218	258	246	252
FCR	1.34	1.23	1.25	1.22
Mortality (%) – post infection	33.0	20.8	18.4	11.0

after Ramli et al., 2005

- **High efficiency → independently proven**
- **No residues**
- **Easy and safe to handle**
 - **Non-corrosive**



Safe for humans and animals
Efficient growth of fish & shrimp
Profitable for farmers

The use of AQUAFORM – aiming towards sustainable aquaculture!



Thank you!

FORMI



increasing growth

saving feed costs

strong antimicrobial effects

high survival rates