Twitter™ on Aquaculture: Understanding the Latent Information Using R

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Abstract
Social network sites such as Facebook and Twitter have significant importance in connecting people at present. For scholarly use, information from these networks can be used for various research purposes including data mining, trend analysis etc. On the other hand, aquaculture provides one of the best solutions for global food security and poverty alleviation. Future growth of aquaculture practices may also depend upon the knowledge/information sharing on social media platforms. The purpose of this study was to understand the latent information of twitter messages (tweets) related to the aquaculture. R programming language and the *TwitteR* package were used to extract and analyze the tweets. Topic modeling approach was used to identify the key aquaculture themes that can be used to classify the tweets. Descriptive analysis of tweets indicated that twitter users have used 17 language profiles. 372 twitter profiles tweeted about aquaculture. "GAA Aquaculture" (2.2%), "Farming Tilapia" (1.8%), "Grow Aquapincis" (1.6%), "Wild4Salmon" (1.2%) and "FAO fish" (1.2%) were top twitter profiles with the highest number of tweets. 'Aquaculture', 'salmon', 'fish', 'sustainable' and 'lice' were most frequent keywords. Correlation analysis indicated that term 'salmon' was significantly correlated ($p<0.05$) with 'Wild salmon', 'bute fish', 'Argyll' and 'fish farm get out'. Topic model results indicated that tweets can be classified into five key themes (Food security and sustainable aquaculture, fish nutrition, sea lice infestation in salmon aquaculture and Tilapia aquaculture). Diurnal variation of the tweets indicated that food security, sustainable aquaculture, fish nutrition and sea lice infestation were most discussed topics among twitter community.

Keywords: Aquaculture, Data mining, R programming, Topic model, Twitter
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