Sustainability of Fishery Product Processing Industry in Teluk Santong Village using the Altman Method Approach

Zulkieflimansyah[1], Muhammad Nurjihadi[2], Rudi Masniadi[3], Fitriah Permata Cita[4], Diah Anggeraini Hasri[5], Reza Muhammad Rizqi[6]

Sumbawa University of Technology
Indonesia

***Abstract*: This study aims to predict the level of sustainability of the fishery product processing industry in Teluk Santong Village. This research is a quantitative study with a descriptive approach. The object of this research is all the six fishery product processing industries in Teluk Santong Village. Business sustainability is measured using the Altman method, namely the Z-Score indicator. Based on the research results, it is predicted that the crab, salty and shrimp paste industry is in good health or not bankrupt, the empek-empek and fish cracker industry is predicted to be prone to bankruptcy, while the shredded fish industry is predicted to go bankrupt with a Z-Score of 1.7.**

***Keywords*: Fish Processing Industry, Altman Method, Z-Score**

Introduction

Indonesia is the largest archipelago state in the world, with a sea area of 42% of the total area. This causes Indonesia to become one of the countries with great fishery potential. In 2020-2024, the government declared the national development goals contained in the National Medium-Term Development Plan (RPJMN), one of which was to build communication with marine and fisheries stakeholders including fishermen, fish farming business actors, salt farmers, marine product processors/marketers. and fisheries, as well as business actors in the marine and fisheries sector (Ministry of Marine Affairs and Fisheries, 2020). On the Performance Report of the Ministry of Maritime Affairs and Fisheries (2020), explained that the management of fish resources is not optimal. In addition, it was also explained that the problem in the fisheries and marine sector is that there is still exploitation exceeding the fish's ability to regenerate, causing the degradation of fish resources. If this is not handled properly, there will be a stockpile of fish if people's purchasing power decreases (Adrienne et al., 2020) especially during the COVID-19 pandemic.

The abundance of fish resources will be one of the regional potentials that will improve the regional economy. This is because the fisheries sector is one of the sectors under the authority of the local government in its management (Satria & Matsida, 2004). West Nusa Tenggara Province is one of the provinces with quite large fishery potential (Directorate-General for Strengthening the Competitiveness of Marine and Fishery Products, 2018). The marine area of NTB is about 59.13% of the total area of NTB. With this potential, it is hoped that it will have an impact on increasing investment in the fisheries and marine sector.

In 2018-2020, the number of realized investments in the fisheries and marine sector has an increasing trend, although in 2020 it decreased by 5% from 2019 as shown in Figure 1.

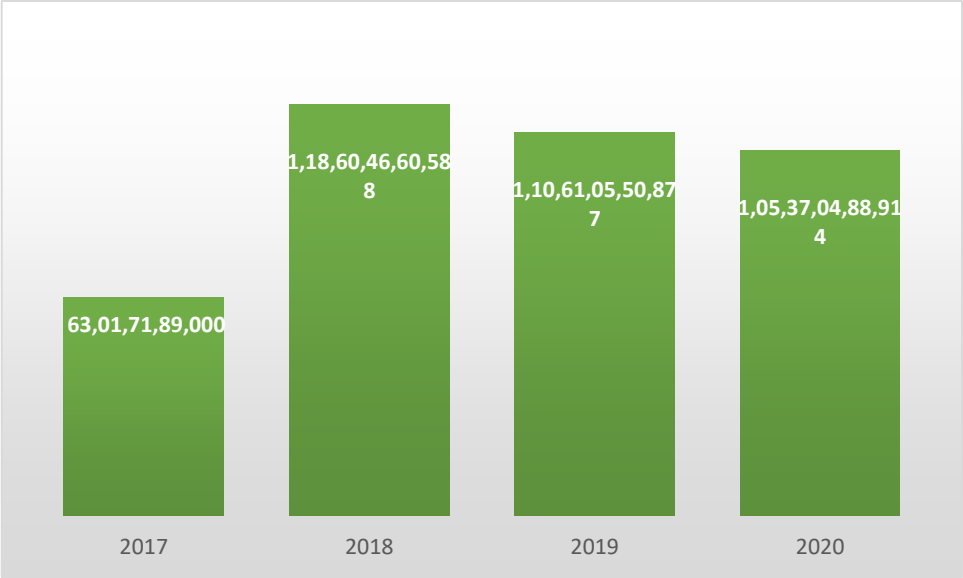

Figure 1: Investment Realization in the Fisheries and Marine Sector of West Nusa Tenggara Province in 2017 - 2020
Source: DPMPTSP NTB Province 2021 (Processed Data)

Expectations of increased investment in the fisheries sector also occur in the fishing industry sector. The shift in regional targets towards industrialization is also contained in the Sumbawa Regency RPJMD 2016-2021. The fishery processing industry is expected to be able to increase people's income. The existence of this industry aims to utilize fishery products, preserve and maintain the quality of fishery products and provide added value to fishery products (Yang et al., 2016). Based on this, a study was conducted to determine the fishery processing industry in one of SAMOTA's strategic areas, one of which is Teluk Santong Village. This study aims to determine the sustainability of the fishery processing industry in the area.

Literature Review

The fishery processing industry is a business that is engaged in the processing of fishery products or organisms that live in water with the aim of being commercialized, both cultivated and caught.(Thrane et al., 2009). Fishery processing is carried out with the aim of increasing the added value of fishery products, as well as preserving fish because they are prone to damage or decay (Skjondal Bar, 2015). This term is also interpreted as handling post-catching activities or fish cultivation using facilities, infrastructure and technology (Riyanto & Mardiansjah, 2018). The increasing number of industries engaged in fisheries processing causes competition in the industry so that later it will have an impact on sustainability because they are unable to compete. Business continuity is closely related to bankruptcy.

Bankruptcy is a problem of financial difficulties which is indicated by the existence of liquidation problems that are not solvable (Hanafi, 2018). Bankruptcy can be caused by inefficient management, imbalance of capital and the amount of debts and moral hazard (Ashari, 2018). These factors are known as internal factors. Other factors that cause bankruptcy also come from external factors, namely changes in consumer desires, difficulty in raw materials, debtor factors, disharmonious relationships with creditors, business competition and global economic conditions (Ashari, 2018). To prevent bankruptcy, one of the efforts made is the analysis or bankruptcy projection developed by Edward I Altman which is called the Z-Score. In the article entitled Z-Score, Altman (1968) predict bankruptcy using independent variables, namely financial ratios to predict Z-Score. The variables used are Working Capital to Total Assets Ratio, Retained Earning to Total Assets Ratio, Earning Before Interest and Tax Total Assets Ratio, Market Value Equity to Book Value Total Debt Ratio, and Sales to Total Assets Ratio. In M Hanafi & Halim (1996), a business that does not go public and has no market value is projected for bankruptcy using the formula

$$Z = 0.717X_1 + 0.847X_2 + 3.107X_3 + 0.420X_4 + 0.998X_5$$

Information
X_1: Working Capital to Total Assets Ratio
X_2: Retained Earning to Total Assets Ratio
X_3: Earning Before Interest and Tax Total Assets Ratio
X_4: Market Value Equity to Book Value Total Debt Ratio
X_5: Sales to Total Assets Ratio

Working Capital to Total Assets Ratio is a ratio used to measure a company's ability to meet short-term obligations (Munawir, 2010). Retained Earnings to Total Assets Ratio is a ratio that shows the company's ability to generate retained earnings from total assets. Retained profit is the accumulated after-tax profit that has been collected since the company was founded and is not distributed to the owners (Munawir, 2010). Earning Before Interest and Tax Total Assets Ratio shows the company's ability to generate profits from company assets, before interest and tax payments (Endri, 2009). Market Value Equity to Book Value Total Debt Ratio is a ratio that measures the company's ability to provide guarantees for each of its debts through its own capital (Endri, 2009). Sales to Total Assets is a ratio that shows whether or not the company can generate sufficient business volume compared to investment in its total assets. This ratio reflects the efficiency of management in using the company's overall assets to generate sales and earn profits (Kartikasari, 2014).

Research Methods

This research is a quantitative research with a descriptive approach. The object of this research is a fish processing business located in Teluk Santong Village, Plampang District, Sumbawa Regency, West Nusa Tenggara (NTB). The research was conducted from September to November 2021. The data used in this study is primary data obtained from business actors processing fishery products. To find out the size of business continuity or bankruptcy is predicted using the Altman method. The benchmark used in predicting business sustainability is by using the Z-Score.

The data collection process was carried out using two stages, namely Focus Group Discussion (FGD) and the observation and interview stages. FGD activities were carried out to find out which industries were engaged in processing fishery products in Teluk Santong Village. Interviews and observations were conducted to obtain information about each business, from operations, finance and marketing.

This study aims to predict the bankruptcy of the fishery processing industry in Teluk Santong Village by using the Z-Score, i.e. if the value of $Z \leq 1.81$, then the business is in a state of bankruptcy, $1.81 < Z < 2.99$ then the business is in a bankrupt-prone condition and the Z value ≥ 2.99 indicates the company is in good health (M Hanafi & Halim, 1996). The variables used in this study can be seen in Table 1.

Table 1: Research Variables

Variable	Formula	Source
Working Capital to Total Assets Ratio (X1)	$X_1 = \frac{AktivaLancar - kewajibanlancar}{TotalAktiva}$	(Munawir, 2010)
Retained Earning to Total Assets Ratio (X2)	$X_2 = \frac{LabaDitahan}{TotalAktiva}$	(Endri, 2009)
Earning Before Interest and Tax Total Assets Ratio (X3)	$X_3 = \frac{LabaSebelumPajakdanBunga}{TotalAktiva}$	(Endri, 2009)
Market Value Equity to Book Value Total Debt Ratio (X4)	$X_4 = \frac{NilaiPasarModalSendiri}{TotalNilaiBukuHutang}$	(Endri, 2009)
Sales to Total Assets Ratio (X5)	$X_5 = \frac{Penjualan}{TotalAktiva}$	(Endri, 2009)

Research Finding

Based on the results of the FGD with industry players and stakeholders and policies in Teluk Santong Village, information was obtained that there are six industries or businesses of processed fishery products, namely crab, salted, shrimp paste, shredded fish, fish crackers and empek-empek. Based on the ability of the business to meet short-term obligations, it is depicted in Figure 2.

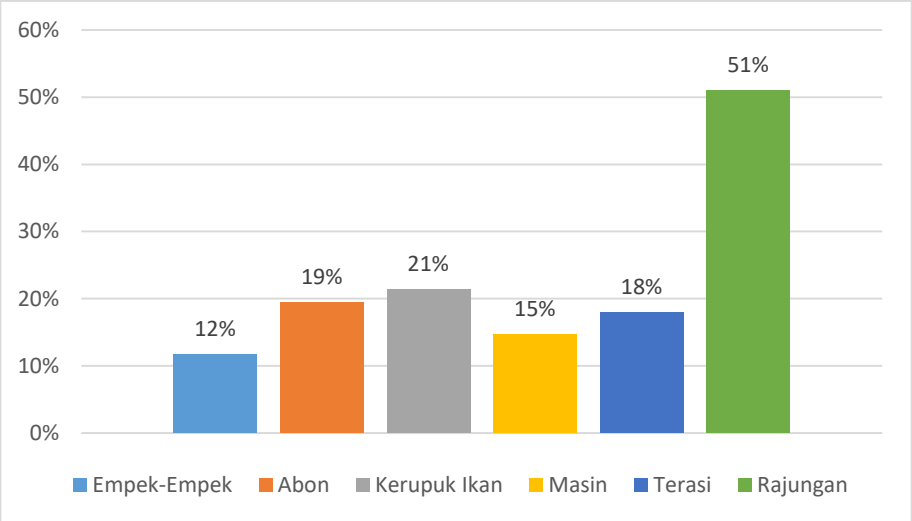

Figure 2. Working Capital to Total Assets Ratio
Source: Primary Data Processed

Based on Figure 2, it can be seen that the value of the Working Capital to Total Assets Ratio is below 125%. This indicates that none of the fishery product processing industries are able to meet their short-term obligations. However, the crab and shrimp paste industry has a very good ability to generate retained earnings from the total assets, while the salt industry is in the good category in this regard. The other three businesses, namely empek-empek, abon and fish crackers are still not very good at generating retained earnings. This can be seen in Figure 3.

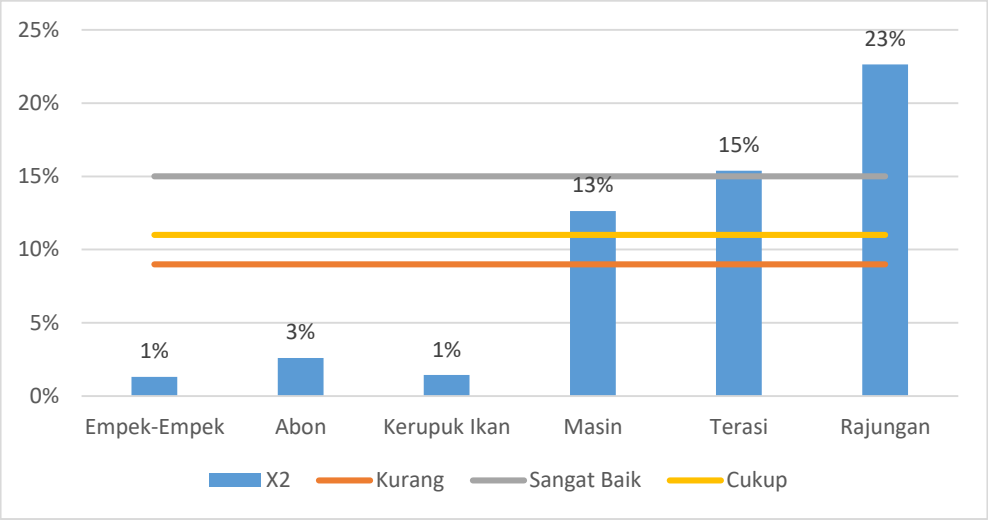

Figure 3: Retained Earning to Total Assets Ratio
Source: Primary Data Processed

The ability of these six industries to generate profits from company assets before interest and tax payments is on average very good as shown in Figure 4.

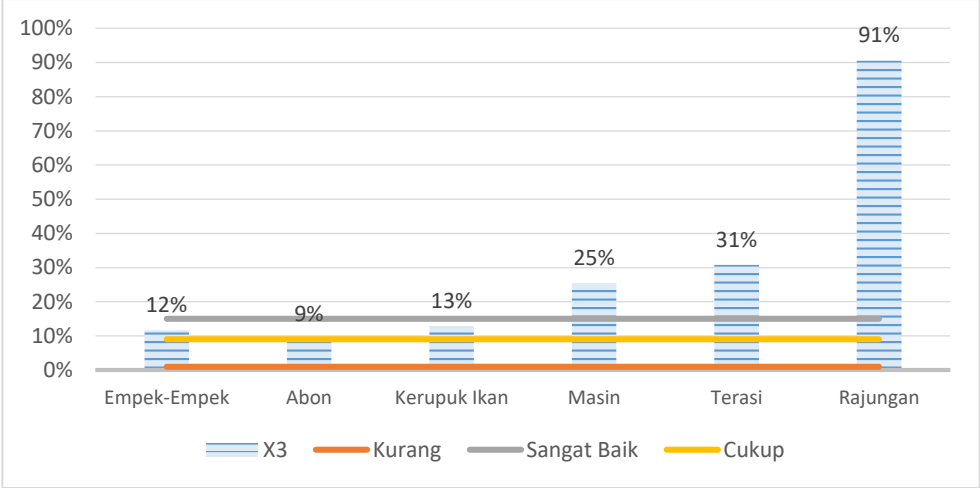

Figure 4: Earning before Interest and Tax Total Assets Ratio
Source: Primary Data Processed

The ability of all these industries to provide guarantees for each of their debts through their own capital is very good. This means that there is no debt problem in the activities of the fishery processing industry in Teluk Santong Village. This condition is visualized in Figure 5.

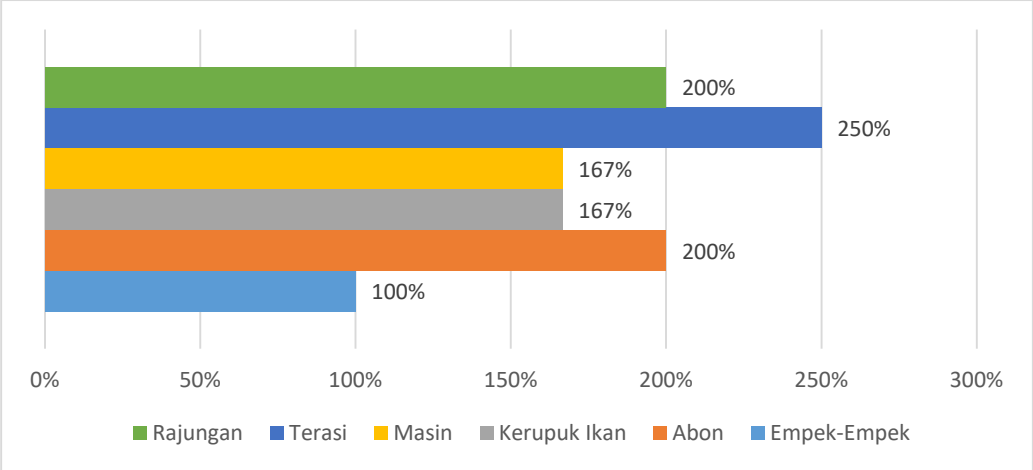

Figure 5: Market Value Equity to Book Value Total Debt Ratio
Source: Primary Data Processed

In generating business volume, there is no processed industry that has very good capabilities. The industry average is in the fairly good category as shown in Figure 6.

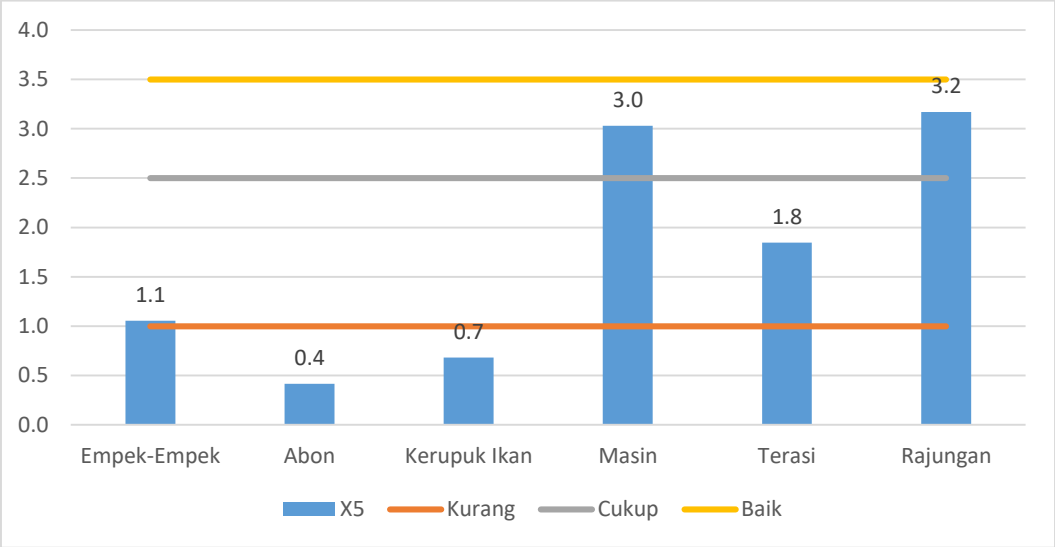

Figure 6: Sales to Total Assets Ratio
Source: Primary Data Processed

In Figure 6, it can be seen that shredded fish and fish crackers have a very poor ability to increase sales, empek-empek and shrimp paste have a fairly good ability, while salt and crab have a good ability to increase sales volume.

The projection of business bankruptcy is shown in Figure 7.

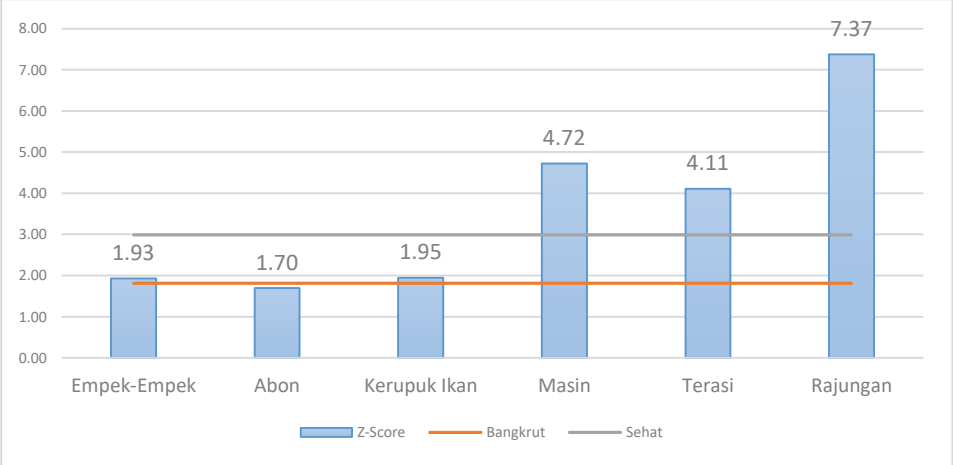

Figure 7. Z-Score
Source: Primary Data Processed

Based on Figure 7, the crab, shrimp paste and salted industries are in the healthy category, which means that it is predicted that they will not experience bankruptcy, while the empek-empek and fish cracker industries are in the bankrupt-prone category. The shredded industry is in the bankrupt category with a Z-Score of 1.7. Some of the factors that influence the condition of the industry are as following:

1. The number of fish resources is decreasing day by day.
2. The public's interest in consuming processed fishery products is still low.
3. Poor marketing strategy.
4. The role of the government is still minimal in facilitating the sale of processed fishery products.
5. Inadequate technology.

Conclusion

Based on the results of the study, using the Z-Score, it was found that the crab, shrimp paste and salty industries did not experience bankruptcy. The fish cracker and empek-empek industry are in a state of being prone to bankruptcy, while the abon industry will go bankrupt if the problem is not resolved immediately. Several things that cause this condition are the low ability of the industry to earn profits and increase its sales volume. The small sales volume is caused by the lack of availability of fish power dumbers,

causing the price of fish raw materials to also fluctuate and sometimes be very high. This then causes the profit received by entrepreneurs is also getting smaller.

References

[1] Adrienne F., Hamzah F., Meilana L., Amien D. A. (2020). Reviving the Fisheries Sector After the COVID-19 Pandemic, PPI World Maritime and Maritime Commission, 7, 1–11

[2] Altman I. (1968). Altman Z-Score. FCS Commercial Finance Group, 3–7 http://www.fcscfg.com/index.php/terminology/altman-z-score

[3] Ashari D. (2018). Practical Guidelines for Understanding Financial Statements. Managerial Finance

[4] Directorate General of Strengthening the Competitiveness of Marine and Fishery Products (2018). Business Potential and Investment Opportunities for Marine and Fisheries of West Nusa Tenggara Province. Marine and Fisheries Ministry

[5] Endri (2009). Prediction of Bank Bankruptcy to Face and Manage Changes in the Business Environment: Analysis of the Altman Z-Score Model. Perbanas Quarterly Review, 2 (1)

[6] Hanafi M., Halim A. (1996). Financial Statement Analysis. UPP-AMP YKPN

[7] Hanafi Mamduh (2018). Financial Management. BPFE

[8] Kartikasari F. (2014). Bankruptcy Prediction Based on Altman's Z-Score Analysis (Study on Group of Textile and Garment Companies Listed on IDX During 2008-2012). Journal of Business Administration, Universitas Brawijaya, 9(1), 81235.

[9] Ministry of Marine Affairs and Fisheries (2020). 149

[10] Munawir (2010). Analysis of Financial Statements Edition 4. In Jakarta: Salemba Empat

[11] Riyanto S., Mardiansjah F. H. (2018). Development of Fishery Processing Industry in Local Economic Development. Journal of Research and Development: Research, Development and Science and Technology Information Media, 14 (2), 107–118, DOI: 10.33658/jl.v14i2.113

[12] Satria A., Matsida Y. (2004). Decentralization policy: An opportunity for strengthening fisheries management system? Journal of Environment and Development, 13 (2), DOI: 10.1177/1070496504264969

[13] Skjøndal Bar E. (2015). A case study of obstacles and enablers for green innovation within the fish processing equipment industry. Journal of Cleaner Production, 90, DOI: 10.1016/j.jclepro.2014.11.055

[14] Thrane M., Nielsen E. H., Christensen P. (2009). Cleaner production in Danish fish processing - experiences, status and possible future strategies. Journal of Cleaner Production, 17 (3), 10.1016/j.jclepro.2008.08.006

[15] Yang, Z., Li, S., Chen, B., Kang, H., & Huang, M. (2016). China's aquatic product processing industry: Policy evolution and economic performance. Trends in Food Science and Technology, Vol. 58, DOI: 10.1016/j.tifs.2016.09.004