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MAINSTREAM NEWSPAPERS COVERAGE OF AGRICULTURAL BIOTECHNOLOGY ISSUES: A STUDY OF DAILY TRUST AND THE NATION NEWSPAPERS

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Abstract

Mainstream newspapers' coverage of biotechnology issues has overtime attracted the attention of media scholars. This study examined select newspaper's coverage of Agricultural Biotechnology issues in Nigeria. The study relied on quantitative content analysis of the news stories of 2 Nigerian newspapers (Daily Trust and The Nation newspapers). The study analysed contents of the select newspapers between the periods of September 2018 to March 2019. The study is anchored on the Agenda setting theory. Findings from the study showed that the two newspapers (Daily Trust and The Nation) have not given adequate coverage to the issues of Agricultural Biotechnology as they were episodic in their reportage of the issue. The newspapers were unable to do this because most of the reports on Agricultural Biotechnology are in the form of news writing, paying little attention to the analysis of risks or benefits that lies therein. It was also found that the selected newspapers accorded low prominence to the issues on Agricultural Biotechnology with the placement of a majority of such stories on the inside pages and far less on the front and back pages. In a nutshell, the study found out that the Newspapers studied have been unsuccessful in their role to communicate to the public on the benefits or otherwise of Agricultural Biotechnology. Thus, it was concluded that Daily Trust and The Nation newspapers adopted a similar pattern in the reportage of Agricultural Biotechnology issues during this period with the way they reported these issues in their respective pages. The study recommends that media; both print and broadcast, which have the capacity of shaping public debate and discourse among citizens should be analytic and should dedicate more space and time when reporting core issues on Agricultural Biotechnology in Nigeria.

Keywords: Biotechnology, Agriculture, Newspapers, Coverage, Nigeria, Daily Trust newspaper, The Nation newspaper

INTRODUCTION

The media have been accused at times of been selective in its coverage of scientific risk; they are at times more interested in politics than science, simplicity rather than complexity, and danger rather than safety (Marks, Kalaitzandonakes, Wilkins & Zakharova (2007). In corroborating the assertions by Marks, Kalaitzandonakes, Wilkins & Zakharova, in a comparative analysis of media reporting of perceived risks and benefits of genetically modified crops and foods in Kenyan and international newspapers, DeRosier, Sulemana, James Jr, Valdivia, Folk & Smith (2015) observed that despite the growing recognition of the importance of agricultural biotechnology in many developed countries, there is a deficiency in the attention given to it in developing countries like Kenya, and Nigeria is no exception.



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Agricultural biotechnology is a range of tools, including traditional breeding techniques, which alter living organisms, or parts of organisms, to make or modify products; improve plants or animals; or develop microorganisms for specific agricultural uses. The essence of Agricultural Biotechnology is to provide farmers with tools that can make production cheaper and more manageable and to help in genetic modification of crops for human consumption (U.S. Department of Agriculture, 2021).

Oparinde, Abdoulaye, Mignouna & Bamire (2017) buttressed that genetically modified (GM) technology has a tremendous potential to transform agricultural productivity and food security in developing countries like Nigeria. Oparinde et al were able to show that genetically modified technology in the form of agricultural biotechnology such as biotechnology cowpea has the potential to increase expected net social welfare in Africa and Nigeria to be precise, and to achieve such a height, the mass media have an important role to play in its coverage of such because it has been predicted that Agricultural Biotechnology through genetically modified crops will increase yield and be more readily available and cheaper by 2050 (Oparinde, Abdoulaye, Mignouna & Bamire: 2017;1).

In recent times, the mass media space has been ambivalent about agricultural biotechnology especially in less technologically advanced nations of the world like Nigeria because of the scarcity of mediated content on it in the media terrain in Nigeria. In Nigeria, for instance, public attitudes towards agricultural and medical biotechnology seemed to mirror the news media's position. Certainly, the public has been skeptical of biotechnology's use in agriculture. Some have observed that perceptions and attitudes about biotechnology might have been cultivated by media framing of its relative risks and benefits: positive for medical, more negative for agriculture (Bauer, 2002).

Although the media are seen to be a tool for the growth of Agricultural Biotechnology, a review of the literature does suggest a negative media view of agricultural biotechnology. However, such views have not been stable over time; they were more positive early on, and more negative during the late 1990s (Priest & Talbert, 1994; Abbott & Lucht, 2000; Bauer, 2002; Bonfadelli, Dahinden & Leonarz, 2002; Marks, Kalaitzandonakes, Allison, & Zakharova, 2002, 2003). The media coverage of agricultural biotechnology has not been extensive in Nigeria, though a small number of studies seem to suggest more positive views as it relates to advanced economies and societies of the world, such cannot be categorically be said of a nation like Nigeria (Bauer, 2002; Conrad, 1999).

Crawley (2007) suggest that agricultural biotechnology is arguably one of the chief biotechnology issues debated at the local level in some geographical areas of the United States where the business of cultivating soil, producing crops, and raising livestock are of primary economic importance, looking at Nigeria where the government for the past five years between 2015 to 2020 have been encouraging local farmers and even private individuals to go into agriculture, genetically modified (GM) crops could increase economic growth and enhance living standards of Nigeria if the media plays a vital role in showcasing the very essence of agricultural biotechnology and what it provides towards developing society like Nigeria that is known to be interested in crop production.

Nigeria as a nation wants to be self-sufficient in agricultural production and to become an exporting nation rather than an importing nation in terms of agricultural produce amidst a fast-changing scientific field like biotechnology. To this effect, one would expect new information and discoveries on agricultural biotechnology from the Nigerian context that



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would influence the balance of risks and rewards and their associated media coverage. Gb`egb`el`egb`e, Lowenberg-DeBoer, Adeoti, Lusk & Coulibaly (2015) opined that “generating economic growth for the millions who live in poverty in developing countries like Nigeria is one of the key world problems of our time. In many cases, economic growth is driven by technological improvements. One of the technologies which could generate economic growth and better living standards in Africa is biotechnology, but political issues have slowed the use of this option, the media in developing countries like Nigeria are at times reluctant to give time and space for in-depth analysis of the importance and impact of biotechnology as it relates to agriculture in Nigeria.

As raised by Gb`egb`el`egb`e et al, genetically modified (GM) crops or agricultural biotechnology in Africa and Nigeria to be precise have become a political issue instead of an agricultural issue or technological issue needing rapid attention. As a result, less media interest has been given to it, and this could be attributed to the fact as noted by Oparinde et al (2017) that little is known about the potential producer and consumer benefits of agricultural biotechnology.

As suggested earlier, new information and discoveries on agricultural biotechnology in Nigeria are needed so that it would influence the balance of risks and rewards and their associated media coverage. To achieve these, it would be safe to ask the following questions: how then are such discoveries and information used by the mass media? Do reporters choose to emphasize more potential risks than potential benefits? Do they choose to emphasize risks over benefits for certain applications over others? Do they interpret and report differently the information on agricultural biotechnology and thereby frame the public debate? Empirical evidence to answer the above questions raised as it relates to the media in Nigeria is deficient to a large extent, as such, the need for this study.

Objectives of the Study

The objectives of the study are to:

- i. Determine the frequency of news stories on benefits of agricultural biotechnology covered in the Daily Trust and The Nation newspapers.
- ii. Find out the prominence given to agricultural biotechnology by the Daily Trust and The Nations newspapers.

REVIEW OF RELATED LITERATURE

Finding a place for Science in the Mass Media

Schäfer (2009) suggests that science communication is said to have changed in the past decades through medialization. It is widely assumed that science is no longer merely transported and translated by the mass media to a passive audience, but “medialized”: In society today, there are different communication technologies that aid the media audience to move along with scientific breakthrough in the media and African countries like Nigeria shouldn’t be left behind. As opined by Schäfer, many authors believe that scientific issues are discussed extensively in the mass media nowadays but that cannot be categorically said of the media in Nigeria but in the western media. The consistent time and space given to issues and news on science, most especially Agricultural Biotechnology, have made it a permanent alternative for livelihood. These have made the discussions on Agricultural Biotechnology plural in its participants who are the media audience and the stakeholders who are into the process of Agricultural Biotechnology.



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Coming down to Africa and Nigeria to be precise, Marques, Critchley & Walshe (2015) buttressed that, ultimately, the success of genetically modified foods through Agricultural Biotechnology will depend upon government approval and market uptake, as well as the extent to which the public accepts or rejects either side of the debate. These debates can only be presented to the African and Nigerian audience through the African and Nigerian media because public attitudes towards such Agricultural Biotechnology news and media debates on such issues may influence the consumption of genetically modified products, and can also influence government policy and regulation relating to their development, production, and distribution which Africa needs presently. Understanding public attitudes toward genetically modified food is therefore important and the media is key towards that.

The Relationship between Agricultural biotechnology and the Mass Media

The application of technology to Agriculture is ultimately aimed at enhancing the quantity and quality of production outputs. Through genetic engineering otherwise called agricultural biotechnology, scientists can increase a plant or animal's resistance to disease and drought, enhance nutritional qualities, and increase crop yields, thereby producing a more efficient, cheaper, and healthier food supply that is less reliant on potentially harmful pesticides (Wolfenbarger and Phifer, 2000). The collaborative effort of the mass media in reporting such development can lead to the advancement of such areas in countries like Nigeria where people are just only coming to terms with the reality of the importance of agricultural biotechnology.

If the media remains silent on why genetic engineering as it relates to agriculture is important, then, the acceptability and funding of research on it by nations of the developing world like Nigeria would be a mirage. There is a strong relationship between the media and agricultural biotechnology because as long as a nation intends to be self-sufficient and self-reliant in agriculture, then reportage on agricultural biotech is necessary for the media. The media occupy a central position on creating the needed awareness and support upon which government policies are shaped and public acceptance moulded.

Biotechnology in the news

Marks, Kalaitzandonakes, Wilkins & Zakharova (2007) suggest that a number of studies have investigated media coverage of biotechnology applications, particularly agricultural ones. Citing Hoban (1995), Marks, Kalaitzandonakes, Wilkins & Zakharova noted that the mass media have been selective in their coverage of agricultural biotechnology. They further accused the media to be more interested in politics than science, simplicity rather than complexity, and danger rather than safety which agricultural biotechnology provides. What does seem clear is that coverage of agricultural biotechnology has been ambivalent rather than overly negative in most developing nations of the world like Nigeria and this calls for more reportage in this area.

It is pertinent to note that communication is central in shaping and understanding the ecosystem through the provision of information on agricultural biotechnology and the role played by humans in harnessing and exploiting limited resources in agriculture. For Marques, Critchley & Walshe (2015), the use of agricultural biotechnology for food is widely touted as a solution to the current third-world famine bedeviling countries like Nigeria. Citing Huang, Pray & Rozelle (2002) and Godfray HCJ, Beddington JR, Crute IR, Haddad L, Lawrence D, Muir JF (2010), Marques, Critchley & Walshe (2015) observed that as well as future food



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shortages are expected to occur alongside climate change, agricultural biotechnology could serve as an alternative and the dividends of using agricultural biotechnology to produce for future consumption need to be reemphasized by the mass media.

As buttressed by Ndinojuo, (2020), the media is the thread that holds all the pieces of activism towards issues like agricultural biotechnology together, bringing focus to the issues raised, setting the agenda for discussion, and bringing scientific advocacy and advocates to the fore, thereby giving attention to the issues on agricultural biotechnology raised by stakeholders. Ndinojuo, (2020) further opined that the media do this in a number of ways such as news reports, feature articles, opinion pieces, editorials, pictures, sponsored adverts on agricultural biotechnology by experts, professionals, business organisations engaged in agricultural biotechnology, and NGOs providing food aid all over the world mostly in war-torn areas of the third world, all contributing meaningfully to inform the people about the discourse on agricultural biotechnology and its best practices.

In a study, Hagedorn and Allender-Hagedorn (1997) examined media coverage of agricultural biotechnology (microbes, modified plants, animals, and foods) from 1987 to 1994. They found that the popular press did focus more on “social” risks associated with biotechnology: health and ethical issues; value, nutrition, safety and labelling of biotech foods; public safety, and regulatory input. Although one would applaud the focus of the study by Hagedorn and Allender-Hagedorn, however, looking at Nigeria in the year 2020 with the impact of Covid19 on agriculture which has led to food shortages in the market, and even when such farm produce is available, they tend to be way too expensive for the common man. So, it would be safe to say that the benefit of agricultural biotechnology to Nigerian society outweighs the risks postulated by the study of Hagedorn and Allender-Hagedorn.

In addition, in looking at the importance of reporting issues related to agricultural biotechnology, Schäfer (2009) assert that although science communication like agricultural biotechnology is said to have changed in the past decades in most advanced media of the world such cannot be said of Nigeria definitively. These changes and their analysis are being put forward because it is widely assumed that science is no longer merely transported and translated by the mass media to a passive audience, but “medialized”: Many authors believe that scientific issues are discussed extensively in the mass media nowadays, that these discussions are plural in its participants and the arguments used, and that the issues at stake are evaluated controversially. It is still unclear; however, if this change applies to all science topics and less advanced nations that have not fully gotten a grip on agricultural biotechnology.

Abbott and Lucht (2000) examined the US and UK media coverage of agricultural biotechnology from 1997 to 2000. They found that reporting was initially positive but turned negative during the peak in media coverage in 1999. Frewer, Miles & Marsh (2002) also investigated the effect of increased media reporting of biotech foods from 1998 to 2000 on public attitudes. They did not explicitly quantify frames employed, however, Marks et al. (2002, 2003) examined media frames of genetically modified crops in US and UK newspapers, they found out that irreversible transgenes were emphasized over benefits (e.g., less pesticide use and associated benefits to water quality, land savings, less impact on wildlife) by the media.



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Furthermore, Bonfadelli et al. (2002: 118) found balanced to somewhat negative reporting of agricultural biotechnology in Swiss newspapers from 1997 to 1999: 25 percent of articles reported risks only, 25 percent both the risks and benefits, 21 percent benefits only, and 29 percent neither risks nor benefits. Scientists, the most frequently sourced group (43 percent of all articles), held positions on both sides of the technology (p. 119). In contrast, Pfund and Hofstadter (1981) found that industrial rather than academic interests set the terms of discussion in media coverage of “recombinant DNA” (medical) in the late 1970s, implying more positive framing of biotechnology news. Priest and Talbert (1994) found that over 70 percent of biotechnology (both medical and agricultural) sources used were experts (either industry or scientists) in the early 1990s and framing was generally more positive in reporting of genetics (medical) news in several US newspapers, Conrad (1999: 294) found that 49 percent to 80 percent of sources used were expert scientists. Conrad (1999) argued that the initial source for many science news stories was the principal author of a breaking journal article published in elite scientific journals.

Moreover, some science reporters may assume that a particular scientific finding does not require “balance” because science has already gone through a peer-review process (Conrad, 1999). From this viewpoint, one might expect more positive framing in reporting agricultural biotechnology. As mentioned earlier, Bauer (2002) is the only study to have systematically compared the reporting of agricultural and medical applications of biotechnology over an extended period. He investigated media coverage in the UK press from 1973 to 1999. He used four frames: prospect, concern, fait accompli, and the degree of risk-benefit. He also found more positive framing of biotechnology applications in UK media during the 1970s and 1980s and he concluded that the media cultivated an observed split in UK opinion—more positive for medical, negative for agriculture during the 1990s. Clearly, some people have suggested that media have been (unduly) negative.

However, empirical findings from biotechnology media studies suggest that the negative stance of the media has fluctuated over time: before the late 1990s, some studies have documented a more positive framing of biotechnology applications including agricultural ones (Pfund and Hofstadter, 1981; Priest and Talbert, 1994; Bauer, 2002). However, later studies have shown that at the height of the public debate, agricultural biotechnology coverage, at least, became more negative (Abbott and Lucht, 2000; Marks et al., 2002, 2003; Bauer, 2002).

On the other hand, coverage has generally been more positive for medical applications. However, it is still unclear whether such focus is due to an undue emphasis on Agribiotech potential risks or lack of attention on potential benefits. Do reporters choose to frame agricultural and medical biotechnologies differently? How is such potential framing related to new information that becomes available on these technologies over time?

To Marks et al (2003) on media framing of biotechnology, observed that several genetic diseases are candidates for gene therapy including cardiovascular disease, cancer, and autoimmune and infectious diseases, such as AIDS and hepatitis. Possible risks of gene therapy include over-expression of a missing protein, causing harm to the patient; inflammation or immune reaction to the viral vector used to express the gene; and transmission of viral vectors from the patient to other humans and the environment (National Cancer Institute, 2000). And at the extreme, it can result in fatality.



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Xenotransplantation involves the use of animal organs or tissue transplants to replace human parts. Potential benefits of xenotransplantation include alleviation of human donor organ shortages and the production of cells and tissue to treat diseases. “Xenografts” are genetically modified to be more human-like in order to prevent hyperacute rejection of the organ by the human body. Risk is typically viewed on an individual basis during clinical trials. However, there are several other concerns, such as infection (spread of animal retroviruses to humans) (Institute of Medicine, 1996).

Agricultural biotechnology has been used to produce higher crop yields, and, hence lower cost of the food supply, plants that are naturally protected from disease and insects, and potentially more nutritious and better-tasting foods. Potential environmental benefits include reduced pesticide use and employment of soil saving cropping methods. Perceived environmental risks include “uncontrollable” or “irreversible” escape of transgenes with potential consequences for biodiversity, wildlife, and ecosystems. Potential food safety risks include possible “allergic reactions” to modified proteins. Crops produced through biotechnology are already significant components of the US and international harvest—especially for some key commodities. These include soybeans, corn, cotton, canola, and papaya.

Most biotech foods, such as herbicide-tolerant soy and Bt-corn are used in animal feeds and the production of ingredients for processed food products. Hence, all four medical and agricultural applications have been associated with potential health risks and benefits for individuals and society as a whole. Individual risks from medical applications include “dreaded” health risks; as well as ethical and moral risks. Potential catastrophic health risks include the “unintended” introduction of viruses into the human population from xenotransplantation and gene therapy. Similarly, agricultural biotechnology has evoked the potential for “catastrophic” effects in wild populations and “dreaded” and “unknown” health risks for future generations.

THEORETICAL FRAMEWORK

This study is anchored on the Agenda setting theory.

Agenda setting theory

As postulated by Baran and Davis (2012), it is important to note that there is a relationship between media reports and people’s thinking of public issues, this is where the Agenda setting theory comes in. According to McQuail (2010), the term ‘agenda-setting’ was coined by McCombs and Shaw (1972, 1993) to describe a phenomenon that had long been noticed and studied in the context of election campaigns. The core idea is that the news media indicate to the public what the main issues of the day are and this is reflected in what the public perceives as the main issues.

To Baran (2004, p. 127), newspapers tell readers what is significant and meaningful through their placement of stories in and on their pages. He emphasized that within a paper’s section, for example, front, leisure, sports, and careers), readers almost invariably to read pages in order (that is, page 1, then page 2, and so on). Readers of newspapers and other print media recognize the fact that this print media tend to place the stories they think are most important on the earliest pages, this presupposes that the newspaper readers trust the judgment of the papers as regard to story placement in them. The newspaper in addition does this because of the power the newspaper has and the need to influence public opinion and media literacy. The active placement of news stories in the news media is a factor of agenda setting.



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In setting agenda in the print media discourse, one is invariably tempted to frame those stories to suit a course, which is why Goffman (1974) developed framing as a theory of communication studies. Mass media using this paradigm of framing theory has the ability to create an image or perception in the minds of its audience, which goes on to influence what they think about, how they think about it, and perception of such issues. Ndinojuo (2020) citing Beder, (2002) observed that Agenda setting is essentially an exercise in power and influence. Setting the agenda involves not only getting issues onto an agenda but also being able to determine the way those issues are defined and the solutions that are considered to be suitable and how they are presented in the media discourse are aligned.

Relating the Agenda setting theory to this paper and discourse, Nigeria as a nation in the 21st century is gradually beginning to accept agricultural biotechnology on a larger scale as an alternative for sufficiency in food production but for the stakeholders to take real action with determination towards full implementation of agricultural biotechnology in all geopolitical zones in Nigeria, then the media has to set the agenda on agricultural biotechnology for discussing, in this case, the print media through the strategic placement of stories in their print to draw the attention and interest of readers to agricultural biotechnology.

In addition, if there is the local capability to develop agricultural biotechnology (genetically modified crops) in Nigeria, then, the media must play a deliberate role of keeping issues as regards agricultural biotechnology in the news because even if people are aware of what agricultural biotechnology is, the complexity attached to agricultural biotechnology might discourage people but because people consider the things that come easily to mind, it would do go if the media (print media) make people remember agricultural biotechnology by giving it consistency and good placement.

METHODOLOGY

The study relied on quantitative content analysis of the news stories of 2 Nigerian newspapers (Daily Trust and The Nation newspapers) given to their wider circulation, readership, the similarity in mode and frequency of production, style, and accessibility to the researchers. The study focused on those stories about agricultural biotechnology in the newspapers from September 2018 to March 2019.

A census study of the content population was done because the population of the content was not many. There were 196 news stories on biotechnology covered by the two select papers under the period of study and only 130 stories focused on agricultural biotechnology. This means that all of the 130 available agricultural biotechnology news stories on the website of the two newspapers were included in the study. Daily Trust covered 90 stories, while the Nations covered 40 stories. The content categories of this study are frequency of coverage and 'the prominence accorded the coverage as guided by the research objectives.

The unit of analysis was the stories, including news, editorial features, and pictures and they were those posted on Daily Trust and The Nations websites. The research instrument was a coding sheet, which was used to extract the data from the transcripts. The data were presented and analysed, using a descriptive method. To follow the rule of mutual exclusivity of coding, where a unit of analysis contains two opposing descriptors, we coded as the present, the descriptor with higher presence, and coded as absent, the descriptor with lesser presence. This approach is consistent with the existing literature in the content study (Lee & Maslog, 2005).



DATA PRESENTATION AND ANALYSIS

Table 1. Types of Stories covered by the Papers

Newspapers	Story type			Total	%
	News	Feature	Editorial		
The Nation	38	2	0	40	17.3
Daily Trust	78	11	1	90	41
Total	126	13	1	140	100

The data in table 1 above shows the types of stories mostly covered by the select newspapers. The data showed that the newspapers gave more emphasis on the straight news than other type of stories. The data indicate that issues related to agricultural biotechnology were reported more in news stories form in the two newspapers and there was no much difference when it comes to coverage of the agricultural biotechnology in the select newspapers in their editorials and feature stories.

Table 2: Frequency of Stories by Daily Trust and the Nation newspapers on Agricultural Biotechnology

Months	Daily Trust		The Nation	
	Frequ ency	(%)	Frequ ency	(%)
March, 2019	9	9.9	5	9.7
February, 2019	49	48	19	44.6
January, 2019	21	25.5	10	24.8
December, 2018	3	4.9	3	14
November, 2018	5	69	1	2.3
October, 2018	1	3.9	1	2.3



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September, 2018 2 4.9 1 2.3

Total	90	100	40	100
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Table 2 above reveals that out of the total number of reports on agricultural biotechnology from the two newspapers, Daily Trust newspaper covered 90 items and The Nation had 40 items covered respectively. This indicates that Daily Trust newspaper gave more attention to stories and issues on agricultural biotechnology than The Nation newspaper.

Table 3: Prominence given to the Stories by the Two Newspapers

Position of the story	Daily trust	The Nation
Front lead story	2(4.6%)	3(9.3%)
Front page other stories	7(9.4%)	4(13.9%)
Inside front right/left page	23(27%)	9(22.6%)
Others	58(59%)	24(54%)
Total	90	40

Table 3 shows that the stories covered by the two newspapers had the following results: other pages represent 88 issues; Daily trust had 58 issues (59%), Nation 24 (54%). This is followed by stories that appeared inside the front right/left pages, this regard Daily Trust (27%) and The Nation (22.6%). The pages with the lowest publications of agricultural biotechnology stories were on front page other stories and stories on front page lead stories but here the result varied from the two newspapers. The Nation recorded the highest in the front page with lead stories (9.3), while, Daily Trust had (4.6). The results from table 3 shows that the select newspapers were not much interested in placing stories on agricultural biotechnology as their front lead story and front-page other story. These are important pages readers are believed to always read in any given newspaper.

DISCUSSION OF FINDINGS

Findings from the study showed that the two newspapers- Daily Trust, and The Nation, differed in their coverage of the subjects and placement of stories on agricultural biotechnology. It can be deduced that Daily Trust, which is north-based and predominantly reports about northern Nigeria, showed more commitment to the coverage on agricultural biotechnology even though more is expected of it given the fact that the northern part of Nigeria is known to be the producer of the majority of the food eaten in Nigeria.

The Nation newspaper on the other hand operates from and mostly reports about southern Nigeria and paid lesser attention to the coverage of Agricultural biotechnology. This is evident in the frequency of their coverage. The reason may simply be because there are lesser activities of Agricultural production in the southern part of Nigeria due to an obsolete land tenure system that limits access to land for farming as we have in Lagos state where the Nation newspaper is based and the fact that more agricultural activities take place in Northern Nigerian than in the south.

Generally, the findings revealed that Agricultural biotechnology received a considerable amount of coverage during the period under study, but for a nation like Nigeria looking



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forward to having sufficiency in food production, the attention given to reportage of agricultural biotechnology by Daily Trust newspaper and The Nation newspaper in the period under study is poor because, both newspapers only had about 130 stories on agricultural biotechnology and in line with the assertions by Baran (2004, p.127), newspaper tell readers what is significant and meaningful through their placement of stories in and on their pages, but looking at the result from table 3 above, the two papers feel short in giving prominence to stories on agricultural biotechnology from the Nigerian context. They placed a majority of stories on agricultural biotechnology in the inside front right/left pages and other pages that readers might not glance through.

This revelation from the study indicates that these two papers, Daily Trust and The Nation newspapers did not use their medium to set the agenda for discourse on agricultural biotechnology. As earlier mentioned, Ndinojuo (2020) citing Beder, (2002) observed that Agenda setting is essentially an exercise in power and influence and it involves not only getting issues onto an agenda but also being able to determine the way those issues are defined and the solutions that are considered to be suitable and how they are presented in the media discourse are aligned. The two select newspapers have not done enough to set agenda for this issue that would probably be in the driving seat of agricultural production going into the future.

Furthermore, the frequency in terms of the number of times the story on agricultural biotechnology was covered in each story type within the scope of the study was appropriate. In the two newspapers, straight news had more coverage on agricultural biotechnology, followed by feature stories, while editorials did not have sufficient coverage. In this regard, Daily Trust had the highest coverage of stories on agricultural biotechnology with a total of 90 stories out of which 78 were found in the news as against The Nation newspaper that had only 40 stories on agricultural biotechnology with only 38 of those stories appearing in the news.

It won't be farfetched to note that, the frequency of the presentation of news stories by the mass media enables news readers to perceive it as important. Given the position of the agenda-setting role of the mass media as the medium that "paints the picture in our heads," emphasis on a news story results' in the assumption that the news story is more important. The emphasis made by both newspapers in this study was on straight news but little was covered on the editorial page, which should have been emphasised more. Given the seriousness that should have been ascribed to straight news stories and the inconsistency of coverage by both newspapers on agricultural biotechnology, therefore, the frequency of the coverage of agricultural biotechnology was insufficient.

In the words of Baran & Davis (2009), one of the basic principles of the mass media is to fulfil societal obligations by setting high or professional standards of informativeness, truth, accuracy, objectivity, and balance. The placement of a particular current issue on the front page of the newspaper by the editor determines its prominence. The prominence given to Agricultural biotechnology issues in the select newspapers for this study was not good enough, as the placement of the stories should have been more on the front-page lead story or front-pages other stories than on other pages. This is because newspaper readers survey the headline of the newspaper to be aware of what they believe is prevailing in the news media as opined by McCombs & Shaw (1993), the mass media may not be successful in telling us what to think, but they are stunningly successful in telling us what to think about.



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CONCLUSION AND RECOMMENDATIONS

This study concludes that Agricultural biotechnology has not received a substantial amount of coverage from the two newspapers selected during the period under study; though the study found out some slight differences in the way and manner the stories were presented by both papers. It can be concluded that Daily Trust paid more significant attention to reportage of agricultural biotechnology than The Nation newspaper, which paid insignificant attention to the coverage, especially when compared to other issues which they considered as more important and appeared to give more attention to such. Therefore, the nature of the reports on Agricultural biotechnology by Daily Trust newspaper and The Nation newspaper is not encouraging; as the newspapers never took the Agricultural biotechnology issue seriously in their coverage, particularly The Nation newspaper. Thus, it was recommended that prominence should be constructively attached to the coverage of the Agricultural biotechnology by the select newspapers as biotechnology would be in the driving seat of agricultural production in Nigeria and in most developing economies of the world going further into the 21st century. These select newspapers and even other newspapers in Nigeria can do better by situating stories concerning Agricultural biotechnology on strategic pages of their newspapers and highlight the benefits of the innovation that is still considered new in Nigeria.

In a nutshell, the study further recommends that media; both print and broadcast with the capacity of shaping public debate and discourse among citizens should be analytic and should dedicate more space and time when reporting core issues on Agricultural Biotechnology in Nigeria.

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