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Analysis of a Nipoferd Symposium on Palm Kernel Cake (PKC) Utilization in Animal Production: The Foundation for a PKC Research Network (PKC-Net) in Nigeria

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Abstract

A 2 day symposium with the general objective of harnessing the current research information on PKC utilization in animal production for transfer to end users, in order to enhance its use in the Nigerian livestock industry and beyond was organized in south-eastern Nigeria for the members academics, students, industry regulators, farmers and Nipoferd staff from 7 to 8 December 2017. The event was organized at the Primetime Colosseum Event Place. The workshop daily proceedings were disseminated widely on Facebook, Instagram, Whatsapp and PAEPARD blog. Twenty seven participants were invited to the symposium, but one person was unavoidably absent, while another five uninvited persons attended on their own volition. The participants were mostly males (80.6%), with academics expectedly accounting for 54.8% of them, indicating the need to attract more female academics to such scholarly events. Of the 16 researchers spoke at the event, 81.3% were from universities, while the values for polytechnic were low (12.5%). Across academic disciplines, animal scientists constituted a preponderant 18.3% of the speakers, agricultural social science and animal health participant values were low, indicating the need to specifically attract these later groups into PKC research being created in the country. The workshop was well received by the participants as shown in podcasts made by participants on the PAEPARD blog.

Keywords: Poultry feeds, cassava products, small-scale farmers, feed millers, Nipoferd

Introduction

Palm kernel cake (PKC), is a cheap and readily available agro-industrial by-product derived from local processing of palm kernel nuts for vegetable oil in Nigeria and many tropical countries. The nutrient content of PKC varies widely, depending upon the oil extraction process, the species of the palm tree and the amount of shell remaining in the cake. PKC has been used as a moderate protein and energy source in different livestock such as dairy cow, pig, rabbit, laying hen and broiler (Okata, 2016). Recent studies employing enzyme treatment and solid-state fermentation of PKC have led to enhanced inclusion levels and nutrient value of PKC for poultry. Recent increases in global production of PKC, with annual growth of 15% amounting to about 8.2 million metric ton in 2012 (Kim *et al.*, 2016), highlight its potential as livestock feed.

A symposium was therefore organized in December 2017 by the Nigerian Poultry Feeds Research and Development (NIPOFERD) consortium at Owerri, with the objectives of harnessing the current research information on PKC utilization in animal production for transfer to end users, in order to enhance its use in the Nigerian livestock industry and beyond.

Materials and Methods

The symposium tagged "TropiSymposium 2017", with the theme, the science and technology of palm kernel cake utilization in animal production was conceived in late August 2017. The flyers containing the background, overall and specific objectives, call for abstracts and full papers and other important information about the event were published in early September 2017 on social media (Linked In, Facebook, What Sapp and Twitter). A comprehensive search of online scholarly publications on PKC from Nigeria was also carried out and the emails of the corresponding authors compiled for subsequent mailing of the event flyer. The event was also promoted through mobile phone calls and word of mouth to contacts at major tertiary institutions in Nigeria. Abstract submissions closed by mid November 2017, while the full papers were requested from the authors of accepted papers by end of November.

Overall, 27 participants were invited to the event made up of 16 speakers, three Nipoferd staff, two student social media reporters, one industry regulator, and five educated farmers. Funds from advertisements placed by three industry supporters in an earlier publication of the Nipoferd consortium were ear-marked for the event. The event was organized at the Primetime Colosseum Event Place from the 7th to 8th December 2017. Certificate of participation was presented to each participant at the end of the event.

Results and Discussions

Table 1 shows the breakdown of participant's attendance to the symposium according to their professions and gender. Twenty seven (27) participants were invited to the symposium, but one person was unavoidably absent, while another

five uninvited persons attended on their own volition. The participants were mostly males (80.6%), with academics expectedly accounting for 54.8% of them, indicating the need to attract more female academics to such scholarly events.

Table 1: Distribution of participants according to professions and gender (n = 31)

Participants	Invited	Uninvited	Absent	Frequency (%)	Male (%)	Female (%)
Academics	16	2	1	17 (54.8)	15 (88.2)	2 (11.8)
Students	2	1	-	3(9.7)	2(66.7)	1 (33.3)
Industry Regulators	1	2	-	3(9.7)	3 (100.0)	-
Farmers	5	-	-	5(16.1)	3(60.0)	2 (40.0)
Nipoferd Staff	3	-	-	3(9.7)	2 (66.7)	1(33.3)
Total	27(84.4)	5(15.6)	1(3.1)	31(100.0)	25 (80.6)	6 (19.4)

Table 2 showed the distribution of the speakers at the event according to their institutions and academic disciplines. Of the 16 researchers spoke at the event, 81.3% were from universities (92.3 and 7.7% male and females respectively), while the values for polytechnic was low (12.5%). Across academic disciplines, animal scientists constituted a preponderant 18.3% of the speakers (92.3 and 7.7% males and females respectively), agricultural social science and animal health participant values were low, indicating the need to specifically attract these later groups into PKC research being created in the country. Overall again, 87.5% of the speakers were males and 12.5% females.

Table 2: Distribution of speakers according to their institutions and academic disciplines (n = 16)

a. Institution	Frequency (%)	Male (%)	Female (%)
University	13(81.3)	12 (92.3)	1(7.7)
Polytechnic	2 (12.5)	1 (50.0)	1(50.0)
Student	1(6.3)	1(100.0)	-
Total	16 (100.0)	14 (87.5)	2 (12.5)
b. Academic disciplines			
Animal Science	13(81.3)	12 (92.3)	1(7.7)
Animal health	1(6.3)	1(100.0)	-
Agric. Social Science	2 (12.5)	1 (50.0)	1(50.0)
Total	16 (100.0)	14 (87.5)	2 (12.5)

Table 3 shows the types of papers presented at the event according to animal species and research approaches adopted by the researchers. Of the 21 papers submitted for presentation 47.65% dealt on PKC utilization in poultry production, while 57.1% of the papers were works on the feeding trials with pig and poultry and another 19.1% were review papers, indicating that feeding trials with poultry was the major research interest of the speakers.

These poultry production research papers were however evenly across broiler and general poultry production interests (40.0% each), while utilization of PKC in local chicken production recorded a lowly 20.0%. However PKC inclusion levels variations was the more popular approach (58.3%) for improving the nutritional value of PKC than enzyme supplementation (25.0%) or probiotic supplementation and solid state fermentation, even though the later are the more recent and effective approaches.

Table 3: Types of papers presented according to animal species and research approaches

Types of papers	Number of Papers	%	Types of papers	Number of Papers	%
a. Type of Animal Production (n = 21)			b. Types of Research (n=21)		
Poultry Production	10	47.6	Feeding trail	12	57.1
Pig production	4	19.1	Chemical analysis	2	9.5
General Animal Production	7	33.3	Reviews	4	19.1
			Farmer practices	1	4.8
			Social Sciences	2	9.5
c. Poultry Types (n = 10)	Number of Papers	%	d. Improvement in nutritional value (n = 12)	Number of Papers	%
Local chicken	2	20.0	Inclusion level variations	7	58.3

Broilers	4	40.0	Probiotic Supplementation	1	8.3
General	4	40.0	Enzyme Supplementation	3	25.0
			Solid State Fermentation	1	8.3

Conclusion

Palm kernel cake research in Nigeria is dominated by university male animal scientists, who work mostly with poultry and commonly adopt varying the inclusion levels of PKC in the diets of such poultry as the major approach for improving the nutritional value of the feed ingredient. There is therefore the need to reach out to other science disciplines such as animal health and agricultural social sciences across all gender and also those that work with other animal species, in order to form a balanced PKC Research Network that would generate appropriate information for the Nigerian animal production industry.

References

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