KCSAP COLLABORATIVE APPLIED RESEARCH GRANTS
AWARDED PROPOSAL SUMMARY

SECTION 1: LEAD INSTITUTION AND PRINCIPAL INVESTIGATOR (PI) PARTICULARS			
1.1	**LEAD INSTITUTION:**	**UNIVERSITY OF NAIROBI**	
1.2	Principle Investigator:		
	Name ***CHARLES K. GACHUIRI***		
1.3	Mailing Address:	P.O. Box 29053-00625 NAIROBI	
1.4	E-Mail Address:	ckgachuiri@gmail.com/gachuiri@uonbi.ac.ke	
1.5	Collaborators and their affiliate Institutions		
	1. Raphel G Wahome		
SECTION 2: PROJECT PARTICULARS			
2.1	**PROJECT No. & TITLE:**	**AR02/1/1Improvement of crop residues: use of crop residue based spent mushroom substrate as livestock feed**	
2.2	KCSAP Livestock Value Chain (i.e. Dairy, Red Meat, Indigenous Chicken, Apiculture, Aquaculture including Animal Health and Pastures and Fodder:	Red Meat	
2.3	Value Chain:	Red Meat	
2.4	Location (Area)	Nairobi	
2.5	Date of Commencement:	Expected Date of Completion:	Total Duration in Months:
	May 2020	October 2021	18 months
2.6	Total Cost of the Project (KES):	4,006,000.00	
3.1	**Executive Summary**	Livestock production is constrained by unavailability of feeds, and where available are of low quality. Crop residues have been used as ruminant feed but their utilization is hampered by high content of lignin and structural polysaccharides. Improvement of utilization of these residues have mostly been through physical and chemical treatments as well as supplementation with other high quality ingredients. Biological methods through production of extracellular enzymes have been suggested. Use of crop residues as mushroom growing substrate can lead to their improvement though cellulolytic and lignolytic enzymes produced during their growth leading to improved production and reduced ruminal methane production.	