STUDIES ON THE FUNCTIONAL INGREDIENTS OF INDICATION TO FERMENTATION PROCESS AMONG CORDYCEPS SPECIES

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ABSTRACT

CORDYAPS IS A FAMOUS CHINESE HERBAL MEDICINE WHICH ORIGINATE FROM CORDYAPS SP. INFECTED LARVA. THE CORDYCEPS MYCELIUM BY FERMENTATION TECHNOLOGY HAS BEEN PRODUCED AS HEALTH WITH ECONOMIC AVAILABILITY AND BETTER HOMOGENEITY THAN NATURAL CORDYCEPS. IT IS IMPORTANT THAT THE CHOICE OF SPECIES AND THE PRODUCTION OF THE FUNCTIONAL INGREDIENTS OF INDICATION DURING FERMENTATION PROCESS REGARDING INOCULUM IN INDUSTRY. THIS STUDY EVALUATED THE MYCELIA AND THE CONTENTS OF THE FUNCTIONAL INGREDIENTS OF INDICATION (ADENOSINE, CORDYCEPIN AND HEA), AND BIOMASS IN SUPERNATANT AT DIFFERENT TEMPERATURE COMPARED THE ANTIBACTERIAL ACTIVITY OF THE MYCELIA AND THE SUPERNATANTS, INVESTIGATED THE EFFECTS OF C/N COMPONENTS IN MEDIA ON THE MYCELIA AND THE FUNCTIONAL INGREDIENTS OF INDICATION DURING FERMENTATION PROCESS AMONG C. SINENSIS, C. GRACILIS, C. MEMORABILIS, C. MILITARIS AND C. OPHIOGLOSSOIDES. RESULTS SHOWED THE PRODUCTION OF MYCELIA WITH AN CONTINUED INCREASE DURING 20 DAYS - SHAKING INCUBATION AT 20 ℃ EACH TESTED SPECIES EXCEPT C. OPHIOSLOSSOIDES MYCELIAL PRODUCTION KEPT STUDY FOR THE 10 - 15 DAY PERIOD AND THEN LITTLE DECREASED UNTIL THE END OF EXPERIMENT. THE OPTIMUM TEMPERATURE RANGE FOR MYCELIA PRODUCTION TO SPECIES AT THE 5 DAY INCUBATION IS FOLLOWING : 23 ℃ FOR C. SINESIS, C. MEMORABILIS AND C. GRACILIS, 20 ℃ FOR C. MILITARIS AND C. OPHIOGLOSSIDES. THE BIOMASS OF THE SUPERNATANTS FROM FERMENTATIVE BROTH IS INDEPENDENCE WITH INCUBATION OF ADENOSINE IN MYCELIUM FOUND IN C. MILITARIS AT 20 ℃ INCUBATION, THE HIGHEST CONTENTS OF CORDYCEPIN IN MYCELIUM FOUND IN C. MILITASIS AT 23 ℃, AND THE HIGHEST CONTENTS OF HEA IN MYCELIUM FOUND IN C. MILITARIS AT 14 ℃ FOR THE DIFFERENT TEMPERATURE INCUBATION EXPERIMENTS AMONG CORDYCEPS SPECIES. THE ABOVE FUNCTIONAL INGREDIENTS OF INDICATION IN THE SUPERNATANTS ALL HIGHEST EXISTED IN C. MILITARIS AT 14 ℃, 23 ℃ INCUBATION, RESPECTIVELY. THE HOT-WATER EXTRACTS FROM CORDYCEPS SPECIES TO STAPHLOCOCCUS AURENS, SERRATIA MARCESCENS AND ESHERICHIA COLI HAD BETTER ANTIBACTERIAL ACTIVITY THAN THE OTHERS AMONG THE SEVEN SELECTED PATHOGENS AND INDEPENDENT OF INCUBATION TEMPERATURE. THE SUPERNATANTS OF FERMENTATIVE BROTH HAD SLIGHT ANTIBACTERIAL ACTIVITY VARIED FROM CORDYCEPS SPECIES BY INCUBATION TEMPERATURE WITH DILUTIONS. THE HIGHEST MYCELIAL PRODUCTION AND THE CONTENTS OF CORDYCEPIN IN MYCELIA FOR C. MEMORABILIS AND THE HIGHEST THE CONTENTS OF ADENOSINE AND MANNITOL IN MYCELIA FOR C. MILITARIS IN WS MEDIUM AMONG CORDYCEPS SPECIES HAVE BEEN FOUND. HOWEVER, C. MILITARIS HAD THE HIGHEST MYCELIAL PRODUCTION AND THE CONTENTS OF ADENOSINE AND MANNITOL IN MYCELIA, AND C. OPHIOGOLSSOIDES HAD THE HIGHEST CONTENTS OF CORDYCEPIN IN MYCELIA IN GMS AMONG CORDYCEPS SPECIES. IN ADDITION, TRACE CONTENTS OF THE FUNCTIONAL INGREDIENTS OF INDICATION EXISTED IN THE SUPERNATANTS OF FERMENTATIVE BROTH VARIED FROM SPECIES. IN 5 L FERMENTOR, THE MYCELIA PRODUCTION OF C. SINENSIS WAS THE HIGHEST AMONG THE TESTED CORDYCEPS SPECIES IN THE SAME CONDITION OF ADENOSINE AND CORDYCEPIN IN MYCELIA FOR C. MILITARIS, AND THE CONTENTS OF MANNITOL IN MYCELIA FOR C. GRACILIS. THE HIGHEST CONTENTS IS MANNITOL THE SECOND IS ADENOSINE, AND THE THIRD IS CORDYCEPIN IN VIEWING OF THE FUNCTIONAL INGREDIENTS OF INDICATION IN MYCELIA FOR CORDYCEPS SPECIES. IN CONCLUSION, THE PRODUCTION OF THE MYCELIA AND THE FUNCTIONAL INGREDIENTS OF INDICATION IN MYCELIA VARIED WITH THE SPECIES OF CORDYCEPS DURING FERMENTATION PROCESS. THERE ARE NO IN ACCORDANCE WITH RELATIONSHIPS BETWEEN ITSELF SPECIAL POTENTIAL IN APPLICATION CONSIDERATION FOR FUTURE.

Keywords : CORDYCEPS, FERMENTATION, MYCELIUM, FUNCTIONAL INGREDIENTS

Table of Contents

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