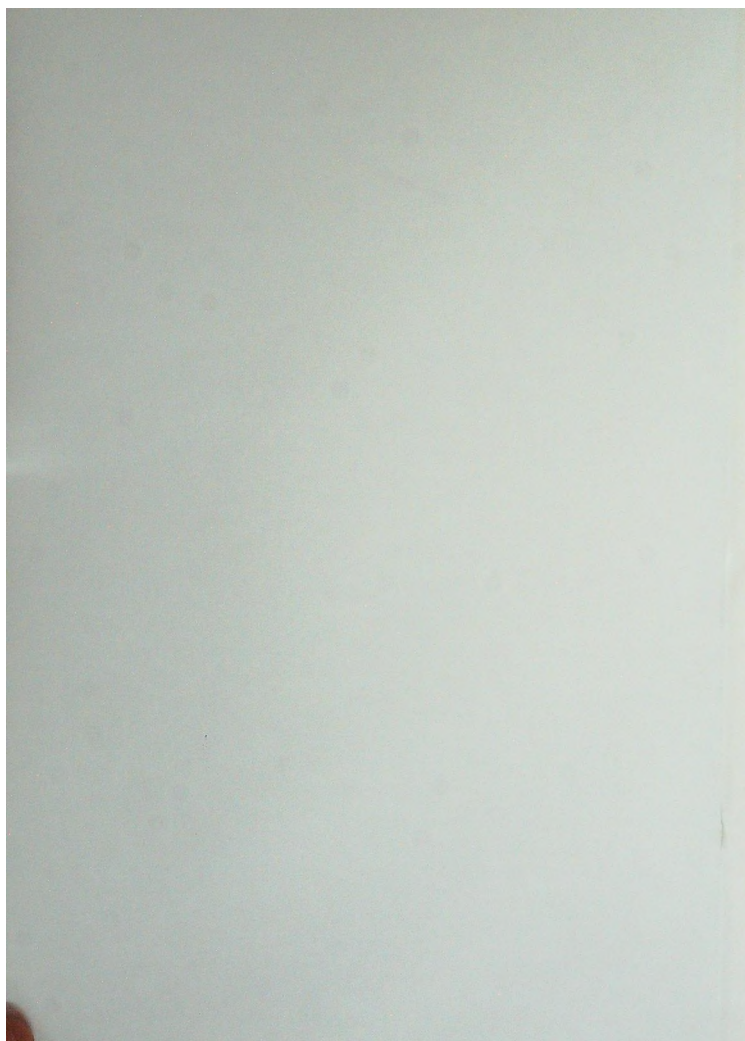


**A DECADE OF
RUBBER RESEARCH IN INDIA
A BIBLIOGRAPHY
2011-2020**



Rubber Research Institute of India
Library & Documentation Centre
Kottayam Kerala India 686 009



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Editors

A.S. Ajitha, N. Latha and V.R. Sujatha



Rubber Research Institute of India
Library and Documentation Centre
Kottayam - 686 006, Kerala, India

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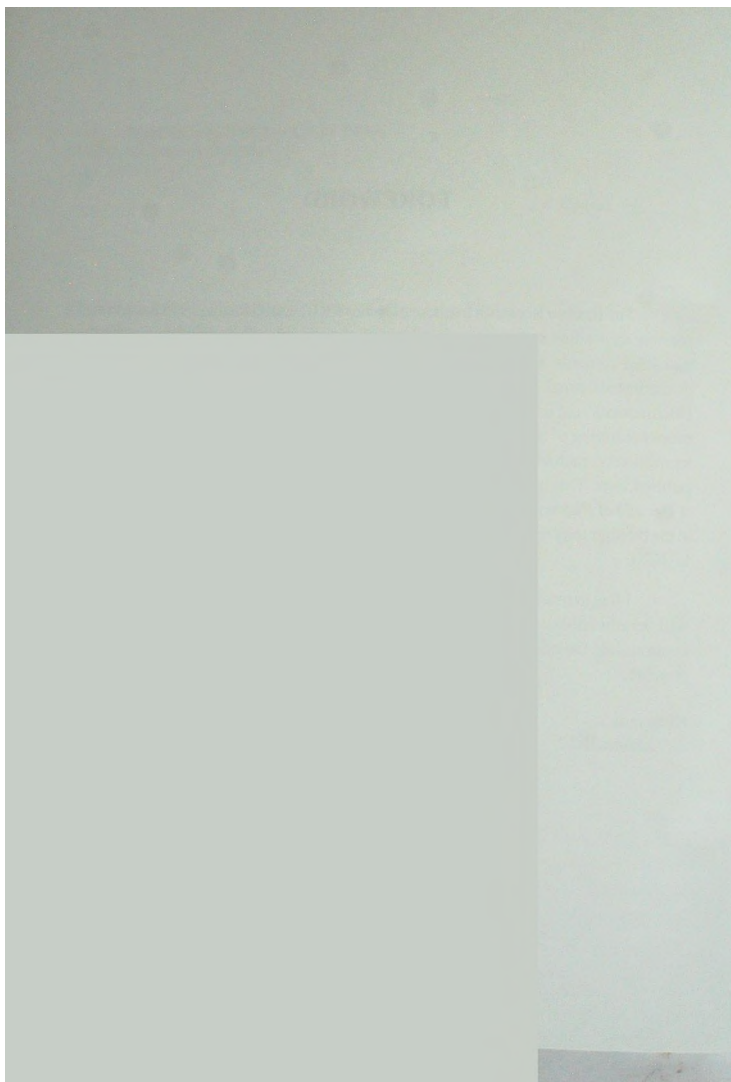
FOREWORD

The Rubber Research Institute of India (RRII) established in 1955 has attained a prestigious position in the international rubber scenario through its research contributions and achievements. Biological, agricultural, and technical research has mainly been disseminated through scientific articles published in journals or presented at scientific forums. Documentation of information generated is a critical component of R & D activities. For proper planning of research programmes and as well as for transforming research with innovations in each area, it is essential to bring together the knowledge available in numerous publications. This compilation of Library of the Rubber Research Institute of India, *A Decade of Rubber Research in India: A Bibliography* is fifth in this series. A glance at the bibliography reveals the breadth of information produced by the Institute from 2011 to 2020.

I feel that scientists, research academics, and stakeholders in the rubber industry will benefit substantially from this publication. I would like to take this occasion to congratulate the editors and all of those who worked hard on making this publication possible.

Kottayam
28th March 2022

Dr. K.N.Raghavan
Executive Director
Rubber Board



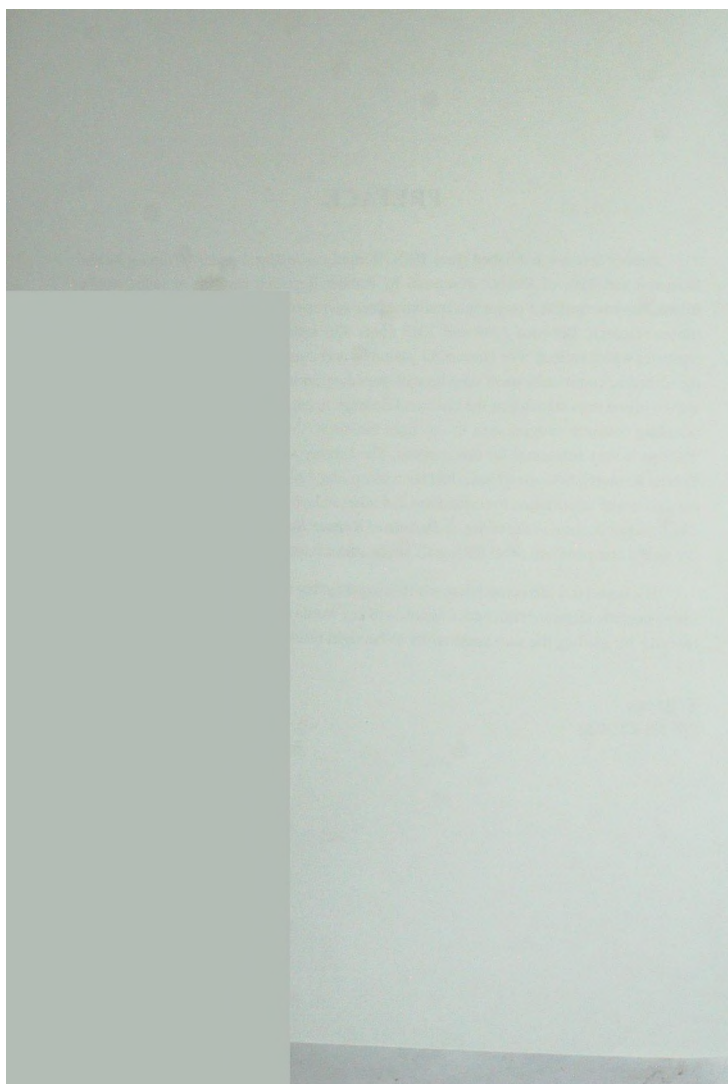
PREFACE

Rubber Science, published since 1988 (formerly as *Indian Journal of Natural Rubber Research* and *Natural Rubber Research*) by Rubber Research Institute of India, Rubber Board, has emerged as a major international peer-reviewed scientific journal in the field of rubber research. Between 1988 and 2017 about 630 authors from India and 14 overseas countries which include For successful planning and execution of research programmes, the scientific community must keep up with the advancements in their respective areas. It is also of prime importance that the historical findings in each area are critically reviewed for orienting research programmes in the right direction. Proper documentation of research findings is very important for this purpose. The Library and Documentation Centre of the Rubber Research Institute of India had been compiling bibliographies of publications for the easy access of information to researchers and other stake holders for the past many decades. The fifth publication in the series, ***A Decade of Rubber Research in India: A Bibliography*** is a useful compendium of all RRII staff publications from 2011 to 2020.

It is hoped that this compilation which brings together all published scientific information in a systematic sequence with added facilities of key words and author indices would facilitate research by guiding the user community to the right reference.

Kottayam
28th March 2022

Dr. M.D. Jessy
Director Research(i/c)
Rubber Research Institute of India



INTRODUCTION

This publication, *A Decade of Rubber Research in India: A Bibliography*, from Library and Documentation Centre of Rubber Research Institute of India, is in continuation to the four earlier compilations in this series. The coverage of scientific and technical literature on rubber generated from RRII during 1955 till 2020 has now been completed with this volume.

The Compilation consists of four sections. The First and main section, Bibliography, comprises the research papers from 2011-2020 listed in chronological order under the surname of each author, with the individual contribution appearing first. This is followed by contribution of the same author as the first author, published under joint authorship, arranged chronologically. In the case of authors with the same initials, the suffixes a, b, and c are used in parenthesis for identification. For their full names refer the Affiliation and Addresses of Authors. Authors from outside RRII/Rubber Board have also been included when they are co-authors with scientists from the RRII. The Author Index, found in Section 2, lists the surnames of authors in alphabetical order, with their entry numbers suffixed. The third section, Keyword Index, alphabetically lists the keywords used in the article to highlight the subject. This index includes 'See' and 'See also' items for vocabulary control. The Affiliation and Addresses of Authors are given in Section 4. Here the Surnames of authors are alphabetically arranged with their full name and address. Omissions and inaccuracies have been avoided to the greatest extent possible.

We would like to express our sincere gratitude to Dr. Jessy, M.D, Director Research (i/c), RRII, for valuable directions that have helped us in making this book a reality. Our genuine thanks is recorded to Dr. James Jacob, former Director Research, for granting permission to compile this Bibliography. Assistance rendered by Mr. Prasad, V.R, Ms Saji Abraham, and Mr. Biju, C.N. at various stages is also gratefully acknowledged. Thanks are due to Mr. Thomas Zachariah, who designed the cover, and M/s Wigi Printers, Kottayam, for timely printing of this bibliography.

Kottayam
28th March 2022

A.S. Ajitha
N. Latha
V.R. Sujatha

INTRODUCTION

The purpose of this study was to investigate the effects of a 12-week training program on the physical and psychological health of sedentary middle-aged adults. The study was conducted in a laboratory setting and involved a group of 20 participants who were randomly selected from a local community center. The participants were divided into two groups: a control group and an experimental group. The control group remained sedentary throughout the study, while the experimental group participated in a supervised exercise program consisting of three sessions per week, each lasting 45 minutes. The exercise program included a combination of cardiovascular and strength training exercises. The data collected during the study were analyzed using statistical methods to determine the significance of the differences between the two groups.

The results of the study showed that the experimental group experienced significant improvements in both physical and psychological health compared to the control group. Specifically, the experimental group showed a significant increase in cardiovascular fitness, as measured by maximum heart rate and oxygen consumption. Additionally, the experimental group reported a significant decrease in anxiety and depression symptoms, as measured by standardized questionnaires. These findings suggest that a 12-week supervised exercise program can have positive effects on the physical and psychological health of sedentary middle-aged adults.

The study was conducted in a laboratory setting, which allowed for precise measurement of physiological variables. However, the laboratory setting may have limited the ecological validity of the findings, as participants were not exposed to real-world environments. Future research should investigate the effects of the exercise program in a community-based setting. Additionally, the study did not measure long-term outcomes, so it is unclear whether the improvements in physical and psychological health were maintained after the 12-week program ended. Future research should also investigate the effects of the exercise program on other variables, such as blood pressure and cholesterol levels. Overall, the study provides preliminary evidence that a 12-week supervised exercise program can have positive effects on the physical and psychological health of sedentary middle-aged adults.

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SECTION 1
BIBLIOGRAPHY



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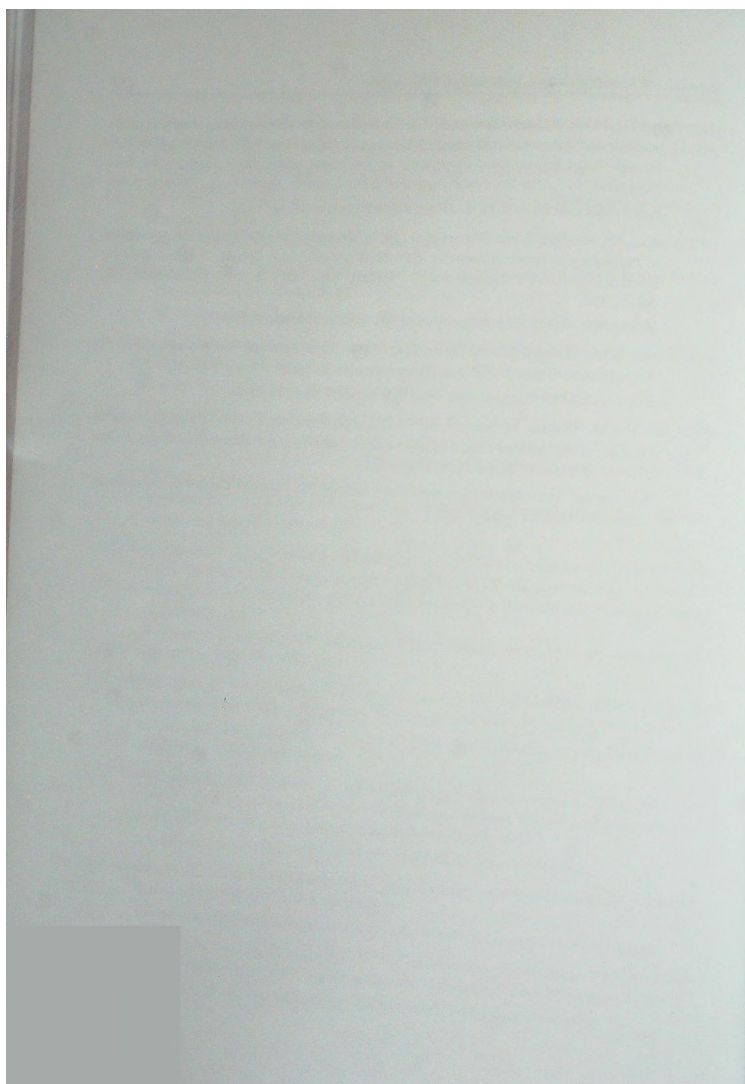
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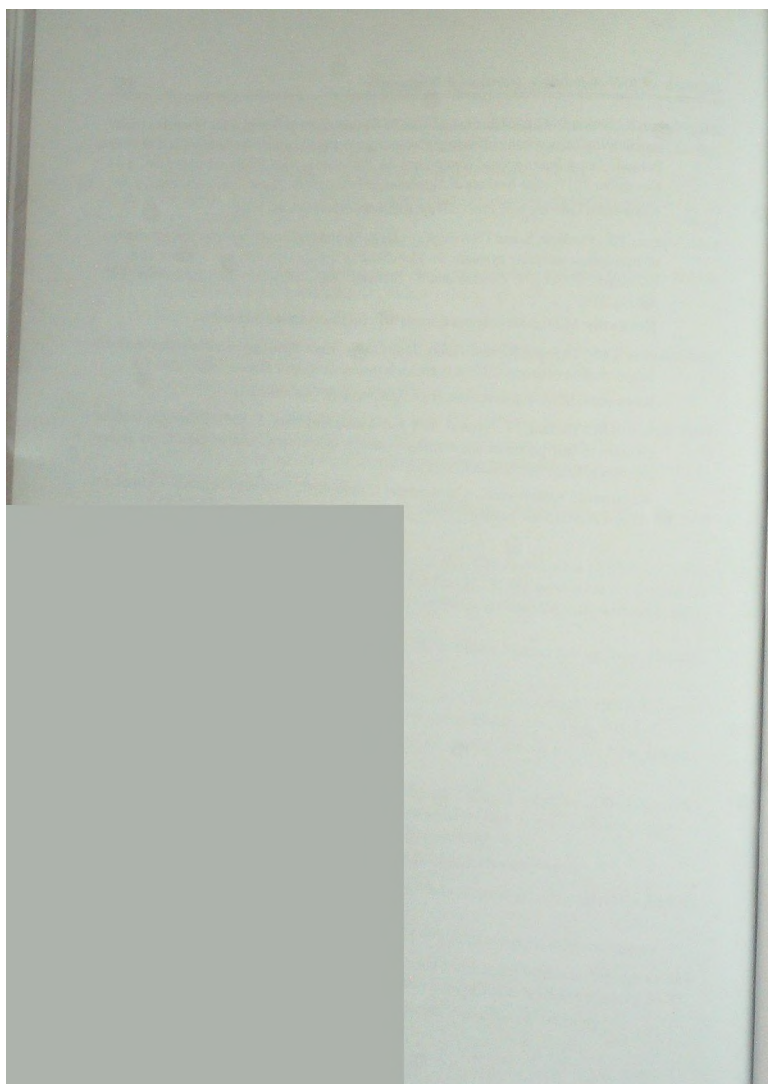
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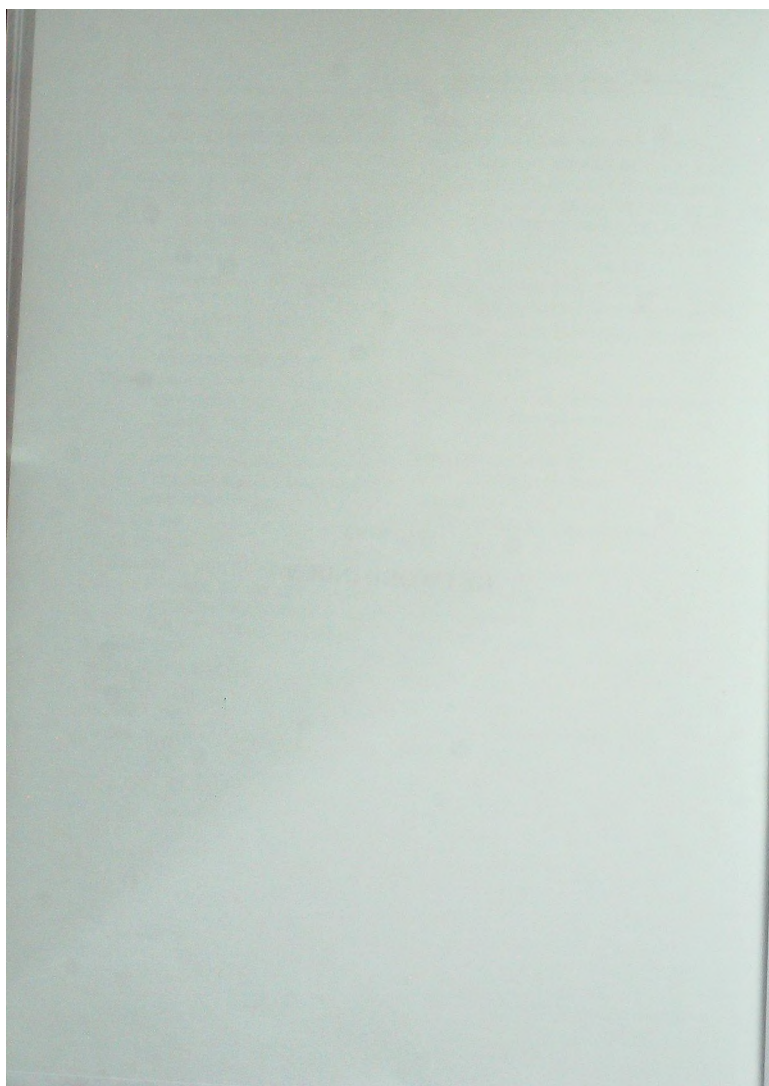
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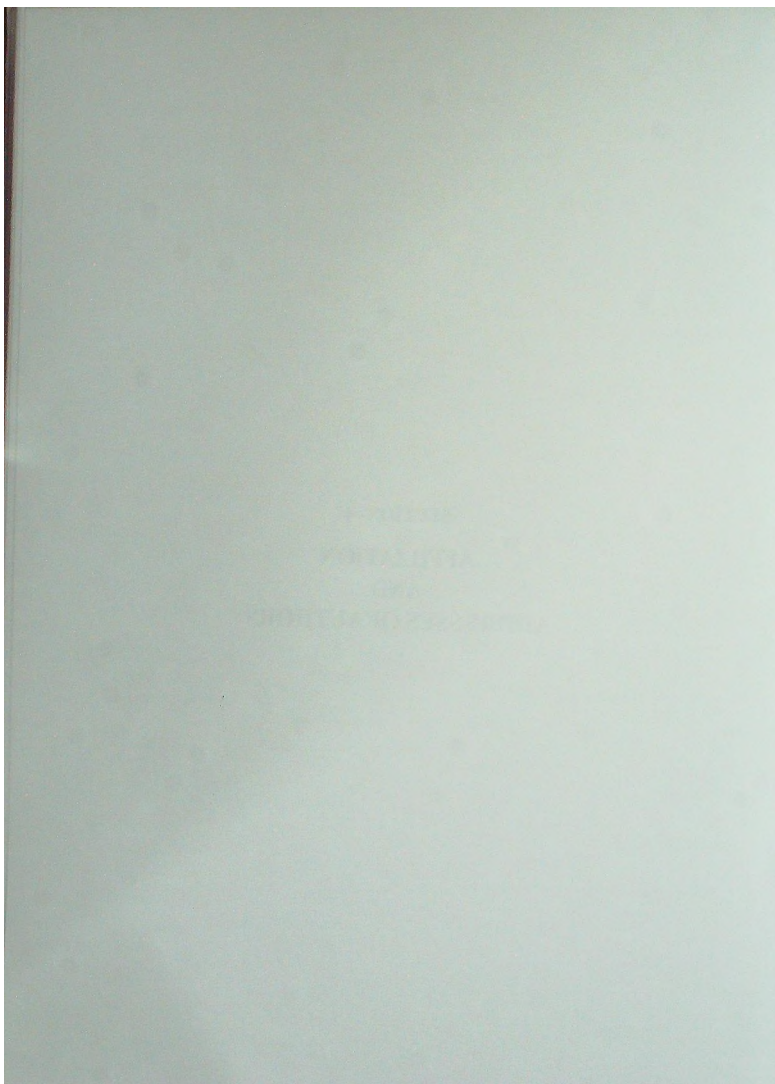
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