

PRODUCTION POTANTIAL OF SAHIWAL BREED AT NIKAWARETIYA FARM

By

PERMANENT REFERENCE

CHANDRAKALA VAIRAMUTHU

A Research Report
Submitted In Partial Fulfilment of the Advanced Course
In

Animal Science

For the award of the degree of
Bachelor of Science in Agriculture

Eastern University
Sri Lanka

December 2001



Approved By

47354

S. J. Valthur

Dr (Miss.) J.Sinniah,
Supervisor,
Department of Animal Science,
Faculty of Agriculture,
Easter University,
Sri Lanka.

Date. 07/02/02

S. J. Valthur

Dr (Miss) J.Sinniah,
Head Animal Science,
Department of Animal Science,
Faculty of Agriculture,
Easter University,
Sri Lanka.

Date. 07.02.02

HEAD
Dept. of Animal Sc.
Faculty of Agriculture
Eastern University, Sri Lanka

PROCESSED
Library - EUSL

Abstract

Production and reproduction parameters were estimated for Sahiwal breed at Nikaweratiya National Livestock Development Board farm. Data were collected from 75 history sheets for the cows calved between the period of year 1990 to 2000. Data were analyzed for the traits of Age at first calving (AFC), lactation length (LL), dry period (DP), Total lactation milk yield (TMY), calving interval (CI), gestation length (GL), lactation number (LN), birth weight (BW) and calving to service period (CSP).

The values of these characters were compared with those values reported by other workers in Sri Lanka as well as in other tropical countries. Analysis of variance was carried out for TMY, CI, LL and birth weight. The estimated mean values for these production traits were 1144 ± 533 lit/lac (\pm SD), 278 ± 65.6 days, 98 ± 59.8 days, 21 ± 2.5 kg for TMY, LL, DP and BW respectively. Reproductive traits were 41 ± 6.9 months, 117 ± 102.7 days, 380 ± 64.2 days and 279 ± 6.2 days for AFC, CSP, CI and GL respectively. Milk yield was significantly influenced by month of calving, lactation length, age at first calving and year of calving. Lactation length was significantly influenced by lactation number, dry period and calving to service period. Calving interval was significantly influenced by calving to service period. Birth weight was not significantly influenced by CSP, AFC, LN, DP, Sex, year of calving (YOC) and month of calving (MOC).

The study revealed that the performance of Sahiwal breed at Nikawaretiya farm was lower than its performance on other farms in Sri Lanka and other tropical countries Such as Pakistan, India, Bangladesh. The present performance level could be improved by giving attention to present feeding regimes and other management practices.

Finally suggestions are given for the improvement of Sahiwal breed performance at Nikawaretiya farm on feeding, breeding, and other management practices.

Contents

Abstract	i
Acknowledgment	ii
Table of Contents	iii
List of Tables	vi
List of Figures	vii
CHAPTER I: INTRODUCTION	1
1. 1 Objectives	6
CHAPTER II: REVIEW OF LITERATURE	7
2. 1 Dairy development institutes in Sri Lanka	7
2. 2 Adoption of artificial insemination in Sri Lanka	15
2. 3 Dairy cattle breeds and their performances in the tropics	19
2. 3. 1 Sahiwal breed	19
2. 3. 2 Red Sindhi and Sahiwal	21
2. 3. 3 Production potential of cross breed in tropical counties	21
2. 4 Some production traits of cattle	25
2. 4. 1 Milk yield	25
2. 4. 2 Milk composition	27
2. 4. 3 Lactation length	29
2. 4. 4 Dry period	30
2. 4. 5 Working life	32
2. 5 Some important reproduction traits of cattle	33
2. 5. 1 Age at puberty	33

2. 5. 2 Gestation period	34
2. 5. 3 Calving interval	35
2. 5. 4 Number of service per conception	36
2. 5. 5 Sex ratio	37

CHAPTER III: METHODS AND MATERIALS 38

3. 1 Location of farm	38
3. 1. 1 Soil	38
3. 1. 2 Climate	39
3. 1. 3 Extent of farm	39
3. 1. 4 Herd composition	40
3. 2 Management practices adopted at the farm	40
3. 2. 1 Management of pasture	40
3. 2. 2 Water supply	41
3. 2. 3 General feeding	41
3. 2. 4 Management of Calf	42
3. 2. 5 Management of heifer	43
3. 2. 6 Management of milking cow	43
3. 2. 7 Management of dry cow	43
3. 2. 8 Breeding activity	45
3. 2. 9 Culling and replacement	46
3. 3 Fate of milk	46
3. 4 Method of data collection	46
3. 5 Analysis of data	47