(2) It is also possible that one or more of the many harmless bacteria encountered in the udder may under certain conditions assume a mildly pathogenic nature and produce inflammation when the necessary predisposing factors are present. Confirmation of this theory can only be supplied by isolation of such an organism and proving its pathogenicity by transmission experiments.

(3) Although it has not yet been proved experimentally one cannot disregard the possibility of the initial damage to the affected portion of the gland having been inflicted by a primary and more potent pathogenic agent. In this connection the view expressed by some workers that a virus may be responsible is entitled to a certain amount of respect.

If secretory disturbance is produced by infection with a specific organism, it is evident that this will weaken or destroy the natural bacteriostatic powers of the quarter. The efficacy of the inhibitory mechanism is then impaired, and the udder bacteria are enabled to multiply with greater freedom. The damage done to the udder in this manner is frequently of a permanent nature and is manifested not only in an increase in bacteria and cells but also in chloride and chloride-lactose index, and a decrease in lactose and solids not fat.

All the evidence produced supports the view that the common udder micrococci in themselves do not produce secretory disturbance in the first instance. They appear to be of the nature of secondary invaders after the resistance of the udder has been "softened up" by the primary factor. Nevertheless there still remains the possibility of these organisms playing a contributory rôle after the acute attack of mastitis in so far as their invasion of and unrestricted multiplication in the affected quarter may to a large extent be responsible for preventing complete recovery of the gland.

## Summary and Conclusions.

An investigation was undertaken with the object of ascertaining to what extent quarters which have always been free from infection with known pathogenic bacteria secrete abnormal milk, and to determine the rôle played by the various aetiological factors in the production of such milk.

The data forming the basis of the investigation were derived from the results obtained by regular analysis of milk samples from the individual quarters of ten grade Friesland cows over a period of four and a half years. Two cows completed three lactations, one completed three and a half lactations and the remaining seven each completed four lactations during the period under review. The cows, which were recruited as pregnant heifers before their first calving, remained free from tuberculosis and contagious abortion, and bacteriological examination of the milk at four-weekly intervals, or more frequently when circumstances warranted it, consistently failed to detect mastitis streptococci or other pathogenic micro-organisms in the quarters. Infection of the udder could, therefore, not be incriminated in those cases in which the milk was abnormal.

The following six factors were used as criteria, namely, solids-not-fat, fat, chloride, lactose, chloride-lactose index and cell content. Tests for solids-not-fat and fat were conducted at weekly intervals during the first two years and fortnightly subsequently. The other four factors were determined from afternoon samples of milk at four-weekly intervals.

The mean obtained for each of the six factors conformed in every case with the standard prescribed for normal milk. Nevertheless a large proportion of the individual samples at various times yielded results which failed to reach the required standards. The proportion of the total which thus yielded abnormal results to the different criteria was:—

| | |
|---|---|
| Solids-not-fat ... ... ... ... ... ... ... ... | 41·3 per cent. |
| Chloride-lactose index ... ... ... ... ... | 39·5 per cent. |
| Chloride ... ... ... ... ... ... ... ... ... | 28·3 per cent. |
| Lactose ... ... ... ... ... ... ... ... ... | 28·1 per cent. |
| Fat ... ... ... ... ... ... ... ... ... ... ... | 3·0 per cent. |

Every one of the forty quarters at some time or other secreted milk which was of abnormal composition, and all twelve quarters of three cows yielded milk which was abnormal in the majority of the tests.

The results obtained furnish striking evidence of the unreliability of all the recognised tests for streptococcus mastitis, which are based on detecting changes in the composition of the milk.

*Aetiological Factors.*

(i) *Age.*—All quarters excepting those that showed evidence of secretory disturbance revealed a slight increase—which was statistically insignificant—in solids-not-fat content in the second lactation. After that the quality of the milk declined, the difference in solids-not-fat content between the second and third lactations being significant.

Fat percentage decreased consistently after the first lactation.

Most of the cases of secretory disturbance were encountered during the second lactation. This was responsible for a marked increase in the mean chloride percentage from 0·1123 in the first to 0·1378 in the second lactation. The third and fourth lactations revealed a slight drop to 0·1367 and 0·1354 respectively. The mean chloride content of the milk in the first lactation was significantly lower than that of the other three periods.

There was a significant decline in the lactose content in the second and third lactations, followed by an insignificant rise in the fourth. This was accompanied by a rise in the chloride-lactose index in the first three lactations and an insignificant drop in the fourth.

The cellular content of the milk showed a considerable increase in every lactation.

There was a progressive deterioration in the quality of the milk of most quarters during successive lactations, and several quarters which commenced their lactation life by secreting normal milk in the first period subsequently became abnormal. This gradual degeneration of the quarters is also revealed in the increasing proportion of samples which gave abnormal reactions in successive lactations. This is illustrated by the following percentages of abnormal results obtained in the first and fourth lactations:—

| | Solids not Fat. | Fat. | Chloride. | Lactose. | Chloride-lactose Index. | Cells. |
|---|---|---|---|---|---|---|
| 1st Lactation..... | 33·8 | 2·0 | 12·1 | 19·1 | 16·6 | 10·2 |
| 4th Lactation..... | 51·7 | 9·0 | 31·9 | 32·0 | 42·9 | 42 4 |

The cause of this deterioration is attributed to normal " wear and tear" in the udder, and to a certain extent this is unavoidable. The process may, however, be accelerated by bad management, for instance by prolonged lactation, insufficiently long dry periods, incomplete milking, slow milking, udder injuries and infection with non-pathogenic as well as with pathogenic bacteria. The unnatural strain placed on the udder of the modern dairy cow by requiring it to remain in an almost constant state of high functional activity is also considered to predispose to rapid deterioration of the udder tissues.

(ii) *Season.*—A fairly even distribution of the calving dates throughout the year eliminated the marked influence which stage of lactation would have exerted on season if the calvings were confined to a certain period of the year.

Contrary to the results obtained by European and American workers, it was found that the quality of the milk secreted by the animals in this investigation was at its lowest level during the winter months (June to August), when the mean solids-not-fat percentage failed to attain the legal limit of 8·50. Fat and lactose showed a similar drop, and chloride and chloride-lactose index increased correspondingly to reach their highest level in June. The advent of spring and early summer was characterized by a marked increase in the quality of the milk which reached its peak during the quarter October to December. Solids-not-fat and lactose were then at their highest level, and chloride and chloride-lactose index at their lowest.

The largest number of abnormal samples were obtained in winter. This is illustrated by the following percentages of abnormal results for the months of June and December.

| | Solids not Fat. | Fat. | Chloride. | Lactose. | Chloride-lactose Index. | Cells. |
|---|---|---|---|---|---|---|
| June..... | 50·0 | 2·3 | 48·2 | 45·6 | 62·1 | 27·0 |
| December..... | 32·0 | 10·0 | 10·4 | 14·8 | 11·1 | 22 1 |

No correlation between high environmental temperature and poor quality milk could be established. On the contrary the best milk was secreted during some of the hottest months of the year and the poorest in mid-winter.

It is suspected that malnutrition is mainly responsible for the poor quality of the milk in winter, and the suggestion is made that the average South African dairy cow has to exist on a subnormal plane of nutrition during the greater part of the year.

(iii) *Stage of Lactation.*—Solids-not-fat declined rapidly from 8·69 per cent. in the first month of lactation to 8·40 per cent. in the third month. It fluctuated round this low level for three months and then increased consistently to reach its highest point (8·71 per cent.) in the final month. The mean solids-not-fat percentage for the first and last months was significantly higher than that for the second to seventh months. The mean percentage was below the legal limit from the 88th to the 172nd day after parturition.

Fat also reached it lowest percentage in the same period though it never fell below the legal standard.

The largest percentage (58·3) of samples that were deficient in solids-not-fat occurred during the third month and the lowest (25·8) in the final month of lactation.

The mean chloride content of the milk increased consistently with advancing lactation from 0·118 per cent. in the first to 0·153 per cent. in the tenth month. Lactose showed a corresponding decrease from 4·87 per cent. to 4·58 per cent. Chloride-lactose index increased from 2·52 to 3·26 during the same period, and cells from 657,000 to 1,524,000 per ml.

The inverse relationship between solids-not-fat and chloride was not maintained during the second half of the lactation period, since chloride content of the milk increased simultaneously with the increase in solids-not-fat while lactose dropped. This is attributed to the fact that the synthetic cells of the gland gradually decline in activity,particularly in the pregnant animal, and the alveolar epithelium becomes more permeable. This permits unchanged blood constituents like serum albumin, serum globulin and salts to pass into the milk unchanged. These constituents maintain solids-not-fat at a high level despite the deficiency in lactose towards the end of lactation.

The practical significance of the effect of lactation stage on milk composition lies in the fact that breeding programmes should be so planned that calving dates are more or less evenly distributed throughout the year, so that at any period the cows in the herd represent all stages of lactation. Particularly should calving of a large proportion of the herd in late summer and autumn be avoided, because in such cases the unfavourable effects of stage of lactation and season will coincide and produce marked depression in the quality of the winter milk.

(iv) *Individuality.*—Three of the ten cows (7905, 7909 and 7921) persistently secreted milk which was abnormal in all respects excepting fat, and cells in the case of 7905. The low cell content of all four quarters of this cow eliminates infection and abnormal bacterial activity as causal factors in her case, and it is concluded that an inherent weakness of the cow herself or of the udder was responsible for her poor quality milk. In the other two cows secretory disturbance and unknown pathogens as well as hereditary weakness were probably jointly concerned.

High milk quality is not always associated with high milk yield, and the final criterion in assessing the value of a cow for milk production and breeding should be the amount of fat and fat-free solids produced rather than the volume of milk.

(v) *Quarter Differences.*—In both composition and yield the milk produced by the two forequarters is very similar, as also is that secreted by the two hindquarters. The two rear quarters, however, secrete milk of a higher quality than the two forequarters, and the milk obtained from the anterior half of the udder gave a higher percentage of abnormal reactions to the various tests than that of the posterior half.

The mean chloride-lactose index for both forequarters was above the standard prescribed for normal milk.

The poorest quality milk was secreted by the left forequarter and the best by the left hind. There was no difference in the quality of the milk from the right and left halves of the udder.

(vi) *Conformation and Structure.*—Conformation of the udder was judged by means of a score card on which points were awarded for symmetry, evenness, teats, skin, yieldability, softness, free space and collapsibility.

A description based on visual and physical examination is given of each udder.

The udders which showed the most pronounced inter-quarter differences in the composition of milk are those characterized by marked asymmetry. The poor quality of the milk secreted by underdeveloped quarters of certain udders is attributed to anatomical defects of such quarters. It is suggested that this may be due to a deficiency of glandular tissue and consequent inability of such quarters to synthesize sufficient fat, lactose and casein for the volume of milk produced. On the other hand there may be a reduction in the storage capacity and elasticity of such quarters whereby intramammary pressure is raised at an unduly fast rate between milkings. From this the further deduction is made that the secretion of inferior quality milk by udders that are well shaped but show evidence of excessive fibrous tissue is due to inability of the gland to expand properly in order to accommodate the volume of milk secreted without unduly raising intramammary pressure. It is suggested that the persistent secretion of poor milk by such quarters is due to defective histological structure which is probably of an hereditary nature.

(vii) *Non-specific mastitis.*—This condition in which there was definite evidence of acute inflammation but not pathogenic micro-organisms, was observed five times in two cows (7912 and 7913). Although clinically the affected quarters all appeared to have recovered completely after the attacks, examinations of their milk revealed that only one of the quarters was restored to full normal functioning. In two quarters the deterioration was so marked that the milk secreted subsequently was significantly lower in quality than that yielded by the other quarters of the same cows.

All five cases of non-specific mastitis occurred in the second half of the first lactation and in the first half of the second lactation. This and the number of secretory disturbances which were observed at the same time suggest that the udder undergoes its maximum development at that period, and is, therefore, more susceptible to adverse influences at this stage than at any other.

The cause of the non-specific mastitis was not determined. The possibility of a virus being concerned cannot be disregarded, nor can the likelihood of one or more of the " normal " udder bacteria becoming pathogenic be ignored.

In two of the five cases the disease was heralded by an increase in the cell content of the milk a month or two before other symptoms appeared. This indicates that the causal factor was probably active in the quarters for some time before the natural resistance of the udder was overcome.

(viii) *Micro-organisms.*—The bacterial counts for all quarters were uniformly low during the first lactation, but when once micro-organisms were established in the udder they increased progressively with successive lactations. An abnormal increase in both bacteria and cells was observed in those quarters that were affected with non-specific mastitis or showed evidence of secretory disturbance.

High bacterial count was frequently, though not invariably, found to be accompanied by a high cellular content of the milk.

Poor quality milk was not necessarily characterized by high bacterial and cell content. Where the abnormalities in the milk were found to be due to hereditary factors, bad conformation of the udder and seasonal effects, the bacterial and cell counts were frequently very low.

Micro-organisms may be concerned in the production of non-specific mastitis, for instance by (a) an abnormally big increase in the number of " normal " udder bacteria; (*b*) one or more of these " normal " bacteria becoming pathogenic; (*c*) or after the initial resistance of the udder has been broken down by a more potent agent they may assume the rôle of secondary invaders and provide a constant source of mild irritation which is responsible for the permanent deterioration in the quality of the milk produced by the affected quarters.

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## APPENDIX.

Detailed results of tests carried out on the individual

COW 7904.

| Days after Calving. | Right Fore. | | | | | | | Right Hind. | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Solids not Fat. Per Cent. | Fat. Per Cent. | Chloride. Per Cent. | Lactose. Per Cent. | Chloride-lactose Index. | Cells (thousands per ml.). | Bacteria. | Solids not Fat. Per Cent. | Fat. Per Cent. | Chloride. Per Cent. | Lactose. Per Cent. | Chloride-lactose Per Cent. | Cells (thousands per ml.). | Bacteria. |
| **First Lactation.** | | | | | | | | | | | | | | |
| 32 | 8·53 | 3·49 | ·106 | 5·14 | 2·07 | 47 | 10 | 8·50 | 3·57 | ·101 | 4·76 | 2·13 | — | 0 |
| 60 | 8·54 | 3·39 | ·086 | 5·14 | 1·67 | 53 | 0 | 8·59 | 3·29 | 0·91 | 4·86 | 1·88 | 18 | 30 |
| 88 | 8·76 | 3·46 | ·071 | — | — | 18 | 10 | 8·53 | 3·76 | ·086 | 4·67 | 1·84 | 24 | 30 |
| 116 | 8·46 | 3·95 | ·101 | 5·05 | 2·01 | 47 | 240 | 8·97 | 4·15 | ·086 | 4·48 | 1·92 | 12 | 310 |
| 144 | 8·37 | 3·78 | ·101 | 5·24 | 1·93 | 89 | 10 | 8·46 | 3·86 | ·096 | 4·86 | 1·98 | 65 | 20 |
| 172 | 8·60 | 4·03 | ·091 | 4·76 | 1·92 | 142 | 0 | 8·67 | 4·28 | ·111 | 5·05 | 3·26 | 65 | 0 |
| 200 | 8·79 | 3·93 | ·101 | 4·95 | 2·05 | 160 | 0 | 8·81 | 3·93 | ·106 | 4·76 | 2·23 | 124 | 0 |
| 228 | 8·80 | 4·14 | — | 4·76 | — | 272 | — | 9·42 | 4·78 | ·122 | 4·83 | 2·52 | 166 | 0 |
| 256 | 8·92 | 4·51 | ·122 | 4·76 | 2·55 | 65 | 20 | 9·47 | 3·85 | ·132 | 4·95 | 2·66 | 118 | — |
| 284 | 8·82 | 4·57 | ·132 | 4·76 | 2·77 | 65 | — | 8·82 | 4·62 | ·106 | 4·95 | 2·15 | 77 | — |
| Average | 8·63 | 3·84 | ·101 | 4·95 | 2·12 | 96 | 36 | 8·75 | 3·93 | ·104 | 4·82 | 2·16 | 74 | 49 |
| **Second Lactation.** | | | | | | | | | | | | | | |
| 32 | 8·43 | 4·42 | ·132 | 4·95 | 2·66 | 24 | 400 | 8·43 | 4·23 | ·127 | 4·86 | 2·60 | 41 | 100 |
| 60 | 8·60 | 3·88 | ·132 | 4·57 | 2·88 | 18 | 100 | 8·70 | 3·92 | ·071 | 4·86 | 1·46 | 41 | 100 |
| 88 | 8·40 | 3·82 | ·157 | 4·95 | 3·17 | 243 | 0 | 8·41 | 3·65 | ·157 | 4·86 | 3·23 | 194 | 50 |
| 116 | 8·51 | 3·83 | ·137 | 4·86 | 2·81 | 9 | 0 | 8·55 | 3·80 | ·137 | 4·86 | 2·81 | 41 | 30 |
| 144 | 8·54 | 3·83 | ·122 | 4·57 | 2·66 | 284 | 60 | 8·60 | 3·93 | ·101 | 4·95 | 2·05 | 71 | 30 |
| 172 | 8·60 | 3·79 | ·127 | 4·76 | 2·66 | 450 | 0 | 8·58 | 3·49 | ·116 | 4·95 | 2·35 | 195 | 30 |
| 200 | 8·87 | 4·12 | ·106 | 4·95 | 2·15 | 840 | 50 | 8·82 | 3·87 | ·096 | 4·86 | 2·35 | 201 | 0 |
| 228 | 8·62 | 3·74 | ·101 | 4·76 | 2·13 | — | 60 | 8·70 | 3·90 | ·101 | 4·76 | 2·13 | — | 40 |
| 256 | 8·30 | 3·76 | — | — | — | — | — | 8·57 | 3·69 | — | — | — | — | — |
| 284 | 8·74 | 4·10 | ·137 | 4·19 | 3·26 | 124 | 0 | 8·68 | 3·83 | ·157 | 4·95 | 3·17 | 53 | 20 |
| Average | 8·56 | 3·94 | ·128 | 4·73 | 2·71 | 249 | 74 | 8·60 | 3·84 | ·118 | 4·88 | 2·46 | 105 | 44 |
| **Third Lactation.** | | | | | | | | | | | | | | |
| 32 | 8·56 | 3·82 | ·172 | 4·86 | 3·54 | 71 | — | 8·76 | 4·43 | ·106 | 4·76 | 2·23 | 112 | — |
| 60 | 8·47 | 2·58 | 0·75 | 4·95 | 1·53 | 260 | — | 8·51 | 3·94 | ·081 | 4·76 | 1·70 | 189 | — |
| 88 | 8·24 | 3·35 | ·116 | 4·57 | 2·55 | 959 | — | 8·35 | 3·44 | ·086 | 4·95 | 1·74 | 41 | — |
| 116 | 8·63 | 3·44 | ·106 | 4·86 | 2·19 | 189 | — | 8·33 | 3·82 | ·127 | — | — | 71 | — |
| 144 | 8·36 | 3·74 | ·142 | 4·57 | 3·10 | 77 | — | 8·32 | 4·18 | ·106 | 4·76 | 2·23 | 53 | — |
| 172 | 7·99 | 2·46 | ·122 | 4·95 | 2·46 | 71 | — | 8·30 | 2·70 | ·071 | 4·95 | 1·43 | 41 | — |
| 200 | 8·24 | 3·14 | ·147 | 4·29 | 4·42 | 7,505 | — | 8·55 | 3·69 | ·127 | 4·57 | 2·77 | 3,006 | — |
| 228 | 8·52 | 3·82 | ·162 | 4·57 | 3·31 | 1,189 | — | 8·63 | 4·17 | ·137 | 4·95 | 2·76 | 7,734 | — |
| 256 | 8·34 | 4·50 | ·162 | 4·10 | 3·95 | 1,456 | — | 8·42 | 3·92 | ·127 | 4·76 | 2·66 | 1,751 | — |
| 284 | 8·26 | 4·48 | ·187 | 4·19 | 4·47 | 3,006 | — | 8·43 | 4·80 | ·182 | 4·10 | 4·45 | 645 | — |
| Average | 8·38 | 3·43 | ·139 | 4·59 | 3·05 | 1,478 | — | 8·47 | 3·87 | ·115 | 4·73 | 2·44 | 1,364 | — |

he individual quarters of each cow.

904.

| Left Fore. | | | | | | | Left Hind. | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Solids not Fat. Per Cent. | Fat. Per Cent. | Chloride. Per Cent. | Lactose. Per Cent. | Chloride-lactose Index. | Cells (thousands per ml.). | Bacteria. | Solids not Fat. Per Cent. | Fat. Per Cent. | Chloride. Per Cent. | Lactose. Per Cent. | Chloride-lactose Index. | Cells (thousands per ml.). | Bacteria. |
| 8·48 | 3·38 | ·106 | 4·95 | 2·15 | — | 10 | 8·46 | 3·49 | ·106 | 4·86 | 2·19 | — | 30 |
| 8·45 | 3·20 | ·106 | 4·67 | 2·28 | 24 | 70 | 8·64 | 3·32 | ·091 | 4·57 | 1·99 | 12 | 30 |
| 8·42 | 4·47 | ·076 | 4·48 | 1·70 | 41 | 20 | 8·36 | 4·21 | ·106 | 4·57 | 2·33 | 18 | 20 |
| 8·31 | 4·20 | ·106 | 4·86 | 2·19 | 47 | 900 | 8·25 | 4·39 | ·101 | 4·95 | 2·05 | 6 | — |
| 8·48 | 3·64 | ·111 | 5·05 | 2·21 | 18 | 10 | 8·47 | 4·13 | ·091 | 5·05 | 1·81 | 12 | 10 |
| 8·64 | 4·17 | ·106 | 4·76 | 2·23 | 249 | 10 | 8·58 | 4·04 | ·101 | 4·76 | 2·13 | 160 | 0 |
| 8·74 | 3·88 | ·127 | 4·86 | 2·61 | 183 | 10 | 8·84 | 4·12 | ·111 | 4·76 | 2·34 | 284 | 0 |
| 8·81 | 4·11 | ·116 | 4·76 | 2·45 | 278 | 0 | 8·79 | 4·27 | ·111 | 4·76 | 2·34 | 160 | 10 |
| 8·86 | 4·37 | ·132 | 4·76 | 2·77 | 219 | — | 8·86 | 4·49 | ·132 | 4·67 | 2·82 | 237 | 310 |
| 8·77 | 4·50 | ·132 | 4·86 | 2·71 | 237 | — | 8·77 | 4·34 | ·127 | 4·57 | 2·77 | 284 | — |
| 8·57 | 3·92 | ·112 | 4·80 | 2·33 | 133 | 129 | 8·55 | 4·00 | ·108 | 4·75 | 2·28 | 230 | 51 |
| 8·41 | 4·36 | ·132 | 4·86 | 2·71 | 65 | 500 | 8·44 | 4·36 | ·122 | 4·86 | 2·50 | 9 | 500 |
| 8·57 | 3·87 | ·152 | 4·95 | 3·07 | 71 | 100 | 8·53 | 4·01 | ·127 | 4·57 | 2·77 | 12 | 25 |
| 8·37 | 3·82 | ·157 | 4·86 | 3·23 | 77 | 30 | 8·46 | 3·85 | ·142 | 4·95 | 2·86 | 47 | 75 |
| 8·53 | 3·72 | ·132 | 4·76 | 2·77 | 24 | 80 | 8·61 | 3·86 | ·147 | 4·76 | 3·09 | 18 | 10 |
| 8·58 | 3·89 | ·111 | 4·76 | 2·34 | 36 | 180 | 8·63 | 4·13 | ·106 | 5·14 | 2·07 | 124 | 300 |
| 8·61 | 3·69 | ·142 | 4·86 | 2·92 | 130 | 100 | 8·64 | 3·72 | ·122 | 4·95 | 2·46 | 83 | 20 |
| 8·70 | 3·66 | ·111 | 4·76 | 2·34 | 183 | 0 | 8·80 | 3·85 | ·096 | 4·95 | 1·94 | 63 | 100 |
| 8·66 | 3·66 | ·106 | 4·86 | 2·19 | — | 30 | 8·70 | 4·04 | ·101 | 4·95 | 2·05 | — | 60 |
| 8·59 | 3·95 | — | — | — | — | — | 8·50 | 3·56 | — | — | — | — | — |
| 8·76 | 4·11 | ·157 | 4·29 | 3·66 | 71 | 50 | 8·64 | 3·68 | ·142 | 4·76 | 2·98 | 160 | 0 |
| 8·58 | 3·88 | ·133 | 4·77 | 2·80 | 82 | 119 | 8·59 | 3·92 | ·123 | 4·88 | 2·52 | 57 | 120 |
| 8·58 | 3·84 | ·106 | 4·95 | 2·15 | 154 | — | 8·68 | 4·06 | ·122 | 4·76 | 2·55 | 219 | — |
| 8·62 | 3·24 | ·096 | 4·86 | 1·99 | 343 | — | 8·50 | 4·18 | ·096 | 4·95 | 1·94 | 793 | — |
| 8·25 | 3·35 | ·137 | 4·86 | 2·81 | 379 | — | 8·25 | 3·45 | ·096 | 4·76 | 2·02 | 166 | — |
| 8·36 | 3·56 | ·106 | 4·95 | 2·15 | 47 | — | 8·50 | 3·95 | ·091 | 4·95 | 1·84 | 108 | — |
| 8·23 | 3·71 | ·122 | 4·76 | 2·55 | 107 | — | 8·30 | 3·94 | ·122 | 4·48 | 2·71 | 1,071 | — |
| 8·31 | 3·12 | ·122 | 4·76 | 2·55 | 18 | — | 8·44 | 2·65 | ·101 | 5·05 | 2·01 | 59 | — |
| 8·42 | 3·57 | ·132 | 4·38 | 3·01 | 870 | — | 8·32 | 3·45 | ·142 | 4·29 | 3·31 | 675 | — |
| 8·59 | 3·85 | ·152 | 4·57 | 3·32 | 1,020 | — | 8·60 | 3·92 | ·127 | 4·67 | 2·71 | 1,092 | — |
| 8·40 | 3·87 | ·147 | 3·81 | 3·81 | 1,308 | — | 8·22 | 3·13 | ·132 | 4·67 | 2·82 | 888 | — |
| 8·39 | 4·43 | ·213 | — | — | 1,356 | — | 8·65 | 5·03 | ·167 | — | — | 1,465 | — |
| 8·42 | 3·59 | ·133 | 4·66 | 2·71 | 560 | — | 8·45 | 3·77 | ·120 | 4·73 | 2·43 | 654 | — |

← 191-192a

191-192b

## COW 7905 (1).

| Days after Calving. | Right Fore. | | | | | | | Right Hind. | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Solids not Fat. Per Cent. | Fat. Per Cent. | Chloride. Per Cent. | Lactose. Per Cent. | Chloride-lactose Index. | Cells (thousands per ml.). | Bacteria. | Solids not Fat. Per Cent. | Fat. Per Cent. | Chloride. Per Cent. | Lactose. Per Cent. | Chloride-lactose Index. | Cells (thousands per ml.). | Bacteria. |
| **First Lactation.** | | | | | | | | | | | | | | |
| 32 | 8·31 | 3·21 | ·127 | 4·86 | 2·61 | 24 | 20 | 8·29 | 3·69 | ·061 | 4·76 | 1·28 | 18 | 10 |
| 60 | 7·78 | 3·53 | ·076 | 4·67 | 1·63 | 12 | 10 | 7·87 | 3·65 | ·066 | 4·57 | 1·44 | 6 | 30 |
| 88 | 7·70 | 2·96 | ·127 | 5·24 | 2·42 | 12 | 940 | 7·69 | 3·50 | ·132 | 4·67 | 2·82 | 6 | — |
| 116 | 7·70 | 3·07 | ·137 | 4·76 | 2·87 | 12 | 20 | 7·86 | 3·53 | ·127 | 4·76 | 2·66 | 18 | 30 |
| 144 | 8·05 | 3·67 | ·116 | — | — | 83 | 0 | 8·14 | 3·54 | ·142 | 4·76 | 2·98 | 30 | 0 |
| 172 | 8·06 | 3·35 | ·182 | 4·29 | 4·25 | — | 10 | 8·25 | 3·82 | ·132 | 4·76 | 2·77 | — | 10 |
| 200 | 8·12 | 3·36 | ·147 | 4·57 | 3·21 | 136 | 0 | 8·44 | 3·70 | ·122 | 4·57 | 2·66 | 101 | 10 |
| 228 | 8·21 | 3·48 | ·137 | 4·48 | 3·05 | 154 | 0 | 8·49 | 4·20 | ·132 | 4·57 | 2·88 | 55 | — |
| 256 | 8·13 | 3·92 | ·157 | 4·38 | 3·58 | 53 | — | 8·32 | 3·99 | ·152 | 4·67 | 3·25 | 71 | — |
| 284 | 8·03 | 3·80 | ·162 | — | — | 213 | — | 8·23 | 3·84 | ·152 | — | — | 18 | — |
| Average | 8·00 | 3·40 | ·137 | 4·66 | 2·94 | 78 | 125 | 8·14 | 3·72 | ·122 | 4·69 | 2·53 | 36 | 15 |
| **Second Lactation.** | | | | | | | | | | | | | | |
| 32 | 8·13 | 2·88 | ·152 | 4·57 | 3·32 | 142 | — | 8·18 | 3·66 | ·157 | 4·57 | 3·44 | 83 | — |
| 60 | 8·05 | 3·38 | ·147 | 4·95 | 2·97 | 47 | — | 7·99 | 3·60 | ·137 | 4·95 | 2·76 | 65 | — |
| 88 | 7·83 | 3·57 | ·162 | 4·67 | 3·47 | 290 | 0 | 7·82 | 3·70 | ·172 | 4·76 | 3·62 | 521 | 0 |
| 116 | 7·75 | 4·06 | ·167 | 4·57 | 3·66 | 331 | 0 | 7·88 | 3·71 | ·167 | 4·48 | 3·73 | 219 | 50 |
| 144 | 7·77 | 3·56 | ·177 | 4·29 | 4·13 | 71 | 0 | 7·84 | 3·63 | ·203 | 4·19 | 4·83 | 148 | 0 |
| 172 | 7·97 | 3·93 | ·208 | 3·90 | 5·32 | 284 | 150 | 7·94 | 3·88 | ·208 | 3·81 | 5·45 | 373 | 75 |
| 200 | 7·95 | 3·84 | ·187 | 4·29 | 4·37 | 183 | — | 7·97 | 3·91 | ·213 | 3·70 | 5·75 | 491 | 50 |
| 228 | 8·20 | 3·79 | ·203 | 4·00 | 5·06 | 396 | 50 | 8·04 | 3·46 | ·192 | 3·81 | 5·05 | 479 | 0 |
| 256 | 8·31 | 3·88 | ·167 | 4·48 | 3·73 | 160 | 100 | 8·16 | 4·00 | ·157 | 4·19 | 3·75 | 254 | 20 |
| 284 | 8·51 | 4·22 | ·192 | 3·81 | 5·05 | 112 | 0 | 8·40 | 4·37 | ·108 | 4·10 | 2·62 | 189 | 30 |
| Average | 8·03 | 3·60 | ·176 | 4·35 | 4·11 | 202 | 43 | 8·00 | 3·68 | 1·71 | 4·26 | 4·10 | 282 | 28 |

5 (1).

| Left Fore. | | | | | | | Left Hind. | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Solids not Fat. Per Cent. | Fat. Per Cent. | Chloride. Per Cent. | Lactose. Per Cent. | Chloride-lactose Per Cent. | Cells (thousands per ml.). | Bacteria. | Solids not Fat. Per Cent. | Fat. Per Cent | Chloride. Per Cent. | Lactose. Per Cent. | Chloride-lactose Index. | Cells (thousands per ml.). | Bacteria. |
| 8·50 | 3·51 | ·111 | 4·76 | 2·34 | 36 | 10 | 8·12 | 3·80 | ·101 | 4·57 | 2·22 | 6 | 10 |
| 7·85 | 3·52 | ·086 | 4·76 | 1·81 | 3 | 0 | 7·88 | 3·67 | ·091 | 4·76 | 1·92 | 6 | 20 |
| 7·67 | 3·08 | ·147 | 4·76 | 3·09 | 30 | 40 | 7·62 | 3·55 | ·122 | 4·57 | 2·66 | 36 | 20 |
| 7·59 | 3·09 | ·116 | 4·29 | 2·72 | 30 | 0 | 7·93 | 3·43 | ·137 | 4·76 | 2·87 | 47 | 10 |
| 7·78 | 3·64 | ·147 | 4·95 | 2·97 | 136 | 0 | 8·12 | 3·51 | ·142 | 4·29 | 3·31 | 53 | 10 |
| 7·77 | 3·25 | ·172 | 4·19 | 4·11 | — | 0 | 8·22 | 3·76 | — | — | — | — | — |
| 7·93 | 3·40 | ·142 | 4·29 | 3·31 | 83 | 0 | 8·34 | 3·78 | ·127 | 4·57 | 2·68 | 53 | 20 |
| 8·13 | 4·05 | ·177 | 4·29 | 4·13 | 207 | 1,200 | 8·54 | 4·20 | ·152 | 4·76 | 3·19 | 142 | 1,320 |
| 8·04 | 3·96 | ·167 | 4·29 | 3·90 | 178 | — | 8·30 | 4·05 | ·162 | 4·57 | 3·55 | 36 | — |
| 7·82 | 3·81 | ·137 | — | — | 101 | — | 8·15 | 3·92 | ·147 | — | — | 296 | — |
| 7·92 | 3·49 | ·140 | 4·57 | 3·15 | 89 | 156 | 8·14 | 3·74 | ·131 | 4·61 | 2·80 | 75 | 371 |
| 7·95 | 3·39 | ·147 | 4·48 | 3·28 | 651 | — | 8·08 | 3·52 | ·167 | 4·67 | 3·58 | 41 | — |
| 7·89 | 3·44 | ·157 | 4·86 | 3·23 | 83 | — | 7·99 | 3·78 | ·162 | 4·76 | 3·40 | 47 | — |
| 7·95 | 3·49 | ·172 | 4·57 | 3·77 | 130 | 60 | 8·06 | 3·88 | ·152 | 4·57 | 3·32 | 83 | — |
| 7·85 | 4·02 | ·177 | 4·76 | 3·72 | 65 | 1,500 | 7·88 | 3·75 | ·162 | 4·76 | 3·40 | 47 | 50 |
| 7·81 | 3·55 | ·203 | 4·10 | 4·94 | 53 | 400 | 7·85 | 3·62 | ·187 | 4·00 | 4·68 | 100 | 300 |
| 8·05 | 4·09 | ·223 | 3·62 | 6·16 | 142 | 10 | 7·83 | 4·06 | ·208 | 4·09 | 5·08 | 325 | 10 |
| 7·95 | 3·87 | ·208 | 4·00 | 5·19 | 166 | 20 | 7·95 | 3·95 | ·192 | 4·09 | 4·70 | 260 | 100 |
| 8·05 | 3·61 | ·192 | 4·29 | 4·49 | 101 | 0 | 8·06 | 3·56 | ·182 | 4·18 | 4·36 | 195 | 0 |
| 8·18 | 4·03 | ·172 | 4·57 | 3·77 | 154 | 200 | ·16 | 3·96 | ·152 | 4·86 | 3·13 | 260 | 0 |
| 8·50 | 4·32 | ·213 | 4·10 | 5·19 | 148 | 200 | 8·58 | 4·32 | ·192 | 4·00 | 4·81 | 107 | 50 |
| 8·00 | 3·69 | ·186 | 4·34 | 4·37 | 169 | 299 | 8·02 | 3·79 | ·176 | 4·40 | 4·05 | 147 | 73 |

← 193-194a

193-194b

COW 7905 (2).

| Days after Calving. | Right Fore. | | | | | | | Right Hind. | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Solids not Fat. Per Cent. | Fat. Per Cent. | Chloride. Per Cent. | Lactose. Per Cent. | Chloride-lactose Index. | Cells (thousands per ml.). | Bacteria. | Solids not Fat. Per Cent. | Fat. Per Cent. | Chloride. Per Cent. | Lactose. Per Cent. | Chloride-lactose Index. | Cells (thousands per ml.). | Bacteria. |
| **THIRD LACTATION.** | | | | | | | | | | | | | | |
| 32 | 8·35 | 3·41 | — | 4·38 | — | — | — | 7·86 | 3·44 | ·132 | 4·48 | 2·94 | — | — |
| 60 | 7·97 | 3·49 | ·162 | 4·86 | 3·33 | 959 | 300 | 7·81 | 3·17 | ·162 | 4·76 | 3·40 | 456 | 500 |
| 88 | 7·76 | 3·11 | ·208 | 4·57 | 4·54 | 219 | 200 | 7·81 | 2·80 | ·203 | 4·38 | 4·62 | 363 | 500 |
| 116 | 8·02 | 3·27 | ·162 | 4·19 | 3·87 | 172 | 100 | 8·10 | 3·05 | ·172 | 4·38 | 3·93 | 159 | 300 |
| 144 | 8·01 | 3·20 | ·187 | — | — | 266 | 500 | 7·84 | 2·88 | ·187 | — | — | 1,136 | 200 |
| 172 | 7·88 | 3·84 | — | — | — | 515 | — | 7·80 | 3·49 | — | — | — | 544 | — |
| 200 | 7·96 | 3·70 | ·137 | 4·48 | 3·05 | 550 | 800 | 7·81 | 3·74 | ·172 | 4·57 | 3·77 | 142 | 500 |
| 228 | 7·85 | 3·30 | ·152 | 3·71 | 4·09 | 278 | — | 7·77 | 3·02 | ·147 | 4·99 | 3·50 | 166 | — |
| 284 | 7·95 | 3·22 | ·187 | 4·19 | 4·47 | 290 | — | 8·09 | 3·39 | ·213 | 4·00 | 5·31 | 420 | — |
| AVERAGE | 8·01 | 3·40 | ·171 | 4·33 | 3·91 | 379 | 380 | 7·89 | 3·20 | ·173 | 4·38 | 3·92 | 410 | 400 |
| **FOURTH LACTATION.** | | | | | | | | | | | | | | |
| 32 | 8·41 | 4·65 | ·167 | 4·48 | 3·73 | — | — | 8·40 | 4·30 | ·152 | 4·57 | 3·33 | — | — |
| 60 | 8·00 | 3·50 | ·172 | 4·67 | 3·68 | 296 | 20 | 8·07 | 4·12 | ·162 | 4·48 | 3·62 | 142 | 10 |
| 88 | 8·23 | 3·14 | ·167 | 4·48 | 3·73 | 870 | — | 8·20 | 2·81 | ·162 | 4·48 | 3·62 | 402 | — |
| 116 | 8·01 | 3·80 | ·172 | 4·18 | 4·11 | 1,172 | — | 8·33 | 3·18 | ·177 | 4·38 | 4·04 | 442 | — |
| 144 | 8·22 | 3·36 | ·182 | 4·19 | 4·34 | 337 | — | 8·38 | 3·66 | ·157 | 4·38 | 3·58 | 195 | — |
| 172 | 7·58 | 3·08 | ·167 | 3·91 | 4·27 | 1,308 | — | 7·44 | 3·35 | — | — | — | — | — |
| AVERAGE | 8·12 | 3·66 | ·172 | 4·32 | 3·98 | 797 | 20 | 8·17 | 3·60 | ·162 | 4·46 | 3·64 | 295 | 10 |

195-196b →

5 (2).

| Left Fore. | | | | | | | Left Hind. | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Solids not Fat. Per Cent. | Fat. Per Cent. | Chloride. Per Cent. | Lactose. Per Cent. | Chloride-lactose Index. | Cells (thousands per ml.). | Bacteria. | Solids not Fat. Per Cent. | Fat. Per Cent. | Chloride. Per Cent. | Lactose. Per Cent. | Chloride-lactose Index. | Cells (thousands per ml.). | Bacteria. |
| 8·04 | 3·41 | ·172 | 4·76 | 3·62 | — | — | 8·00 | 3·15 | ·197 | — | — | — | — |
| 7·83 | 3·98 | ·162 | 4·76 | 3·40 | 166 | 10 | 7·75 | 3·42 | ·147 | 4·67 | 3·14 | 254 | 0 |
| 7·84 | 3·11 | ·177 | 4·29 | 4·13 | 2,686 | 100 | 8·42 | 3·48 | ·157 | 4·19 | 3·75 | 53 | 50 |
| 8·10 | 3·37 | ·157 | 4·76 | 3·30 | 77 | 300 | 8·30 | 3·93 | ·142 | 4·38 | 3·24 | 53 | 80 |
| 8·01 | 3·72 | ·157 | — | — | 277 | 120 | 7·92 | 3·08 | ·172 | — | — | 136 | 10 |
| 7·93 | 4·13 | — | — | — | 53 | — | 7·79 | 3·31 | — | — | — | 195 | 50 |
| 7·90 | 3·25 | ·142 | 4·76 | 2·98 | 101 | — | 8·00 | 3·54 | ·137 | 4·76 | 2·87 | 148 | — |
| 7·81 | 3·53 | 142 | 4·38 | 3·24 | 163 | — | 8·08 | 3·45 | ·137 | 4·57 | 2·99 | 254 | — |
| 8·09 | 3·49 | ·192 | 4·48 | 4·30 | 332 | — | 8·49 | 3·82 | ·192 | 3·91 | 4·92 | 467 | — |
| 7·59 | 3·53 | ·164 | 4·58 | 3·60 | 443 | 155 | 8·01 | 3·31 | ·160 | 4·38 | 3·54 | 212 | 38 |
| 7·92 | 4·40 | ·162 | 4·19 | 3·87 | — | — | 8·48 | 4·18 | ·167 | 4·38 | 3·84 | — | — |
| 8·17 | 3·88 | ·192 | 4·38 | 4·38 | 1,462 | 100 | 7·85 | 3·29 | ·152 | 4·48 | 3·41 | 414 | 10 |
| 8·27 | 3·17 | ·172 | 4·29 | 4·01 | 1,337 | — | 8·28 | 3·36 | ·182 | 4·48 | 4·06 | 539 | — |
| 7·70 | 2·50 | ·147 | 4·29 | 3·43 | 290 | — | 8·04 | 2·97 | ·132 | 4·57 | 2·89 | 249 | — |
| 8·22 | 3·49 | ·182 | 4·10 | 4·44 | 243 | — | 8·42 | 3·31 | ·177 | 4·00 | 4·43 | 107 | — |
| 7·61 | 3·36 | ·147 | 4·38 | 3·36 | 1,124 | 10 | 7·72 | 3·29 | ·127 | 4·29 | 2·97 | 272 | — |
| 8·00 | 3·50 | ·167 | 4·17 | 3·91 | 891 | 55 | 8·15 | 3·41 | ·156 | 4·55 | 3·60 | 316 | 10 |

← 195-196a

| Days after Calving. | Right Fore. Solids not Fat. Per Cent. | Fat. Per Cent. | Chloride. Per Cent. | Lactose. Per Cent. | Chloride-lactose Index. | Cells (thousands per ml.). | Bacteria. | Right Hind. Solids not Fat. Per Cent. | Fat. Per Cent. | Chloride. Per Cent. | Lactose. Per Cent. | Chloride-lactose Index. | Cells (thousands per ml.). | Bacteria. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **First Lactation.** | | | | | | | | | | | | | | |
| 32 | 8·17 | 3·24 | ·152 | 4·76 | 3·19 | 24 | 0 | 8·11 | 3·49 | ·127 | 4·67 | 2·71 | — | 90 |
| 60 | 7·98 | 2·95 | ·127 | 4·38 | 2·89 | 65 | 70 | 8·04 | 3·15 | ·137 | 4·57 | 2·99 | 125 | 40 |
| 88 | 7·83 | 3·00 | ·132 | — | — | 24 | 350 | 7·85 | 3·08 | ·137 | 4·48 | 3·05 | 178 | 1,000 |
| 116 | 7·92 | 3·40 | ·127 | 4·86 | 2·61 | 130 | 0 | 8·05 | 3·62 | ·142 | 4·95 | 2·86 | 302 | 370 |
| 144 | 8·19 | 3·31 | ·122 | 4·57 | 3·66 | 30 | 0 | 8·20 | 3·64 | ·132 | 4·10 | 3·21 | 254 | 0 |
| 172 | 8·20 | 3·39 | ·132 | 4·57 | 2·88 | 284 | 0 | 8·16 | 3·51 | ·127 | 4·67 | 2·71 | 95 | 80 |
| 200 | 8·27 | 3·83 | ·152 | 4·57 | 3·32 | 4,745 | 20 | 8·55 | 3·78 | ·142 | 4·76 | 2·98 | 219 | 130 |
| 228 | 8·45 | 4·01 | ·142 | 4·38 | 3·25 | 893 | 2,040 | 8·46 | 4·07 | ·152 | 4·38 | 3·47 | 432 | 1,640 |
| 256 | 8·31 | 4·11 | ·162 | 4·38 | 3·70 | 716 | — | 8·34 | 4·08 | ·157 | 4·38 | 3·58 | 195 | — |
| 284 | 8·27 | 4·09 | ·157 | — | — | 224 | 0 | 8·41 | 4·04 | ·147 | — | — | 189 | 10 |
| Average | 8·13 | 3·45 | ·141 | 4·56 | 3·06 | 714 | 276 | 8·17 | 3·61 | ·140 | 4·55 | 3·06 | 221 | — |
| **Second Lactation.** | | | | | | | | | | | | | | |
| 32 | 8·11 | 3·12 | ·127 | 4·57 | 2·77 | 71 | — | 8·22 | 3·15 | ·167 | 4·57 | 3·66 | 219 | — |
| 60 | 8·04 | 3·12 | ·157 | 4·38 | 3·58 | 1,722 | — | 8·05 | 3·71 | ·147 | 4·57 | 3·21 | 314 | — |
| 88 | 7·92 | 3·28 | ·167 | 4·38 | 3·82 | 1,077 | 10,000 | 7·92 | 3·63 | ·152 | 4·29 | 3·54 | 632 | 600 |
| 116 | 7·98 | 3·21 | ·172 | 3·53 | 4·88 | 15,976 | 600 | 8·07 | 3·52 | ·172 | 4·38 | 3·93 | 757 | 1,500 |
| 144 | 7·81 | 3·45 | ·182 | — | — | 1,379 | — | 7·96 | 3·50 | ·167 | — | — | 314 | — |
| 172 | 7·83 | 3·46 | ·197 | 4·10 | 5·82 | 2,337 | 1,200 | 80·2 | 3·51 | ·187 | 4·48 | 4·18 | 284 | 1,600 |
| 200 | 7·99 | 3·60 | ·172 | 3·90 | 4·41 | 1,207 | 1,500 | 8·13 | 3·74 | ·167 | 4·00 | 4·18 | 538 | 750 |
| 228 | 8·09 | 3·63 | ·213 | — | — | 13,372 | 2,500 | 8·19 | 3·67 | ·172 | 4·76 | 3·62 | 811 | 800 |
| 256 | 8·30 | 3·49 | ·218 | 4·10 | 5·31 | 1,544 | 1,500 | 8·38 | 3·70 | ·182 | 4·57 | 3·99 | 828 | 180 |
| 284 | 8·60 | 3·62 | ·187 | 4·86 | 3·86 | 1,396 | 1,000 | 8·80 | 3·88 | ·182 | 4·95 | 3·68 | 538 | 400 |
| Average | 8·03 | 3·31 | ·179 | 4·23 | 4·31 | 4,010 | 2,614 | 8·13 | 3·56 | ·170 | 4·51 | 3·78 | 524 | 790 |
| **Third Lactation.** | | | | | | | | | | | | | | |
| 32 | 8·16 | 3·78 | ·157 | 4·00 | 4·42 | 692 | — | 8·22 | 4·09 | ·147 | 4·76 | 3·09 | — | — |
| 60 | 8·04 | 3·34 | ·177 | 4·57 | 3·88 | 1,260 | 1,000 | 7·98 | 3·36 | ·157 | 4·29 | 3·66 | 284 | 20 |
| 88 | 8·15 | 3·09 | ·162 | 4·48 | 3·62 | 2,021 | 500 | 8·17 | 3·31 | ·157 | 4·67 | 3·36 | 314 | 300 |
| 116 | 7·93 | 3·06 | ·177 | 4·00 | 4·43 | 1,207 | 800 | 7·98 | 3·27 | ·167 | 4·29 | 3·90 | 473 | 200 |
| 144 | 7·94 | 3·37 | ·137 | — | — | 8,166 | 1,000 | 8·03 | 3·33 | ·197 | — | — | 429 | 600 |
| 172 | 7·70 | 3·02 | ·157 | 4·48 | 3·50 | 2,290 | 1,000 | 7·89 | 3·53 | ·162 | 4·38 | 3·70 | 491 | 400 |
| 200 | 7·74 | 3·28 | ·182 | 4·38 | 4·16 | 1,044 | — | 7·76 | 3·15 | ·137 | 4·76 | 2·87 | 1,018 | — |
| 228 | 7·96 | 3·30 | ·147 | 4·29 | 3·42 | 3,858 | — | 7·91 | 3·00 | ·147 | 4·48 | 3·28 | 406 | — |
| 256 | 8·00 | 4·06 | ·177 | 4·29 | 4·13 | 1,710 | — | 7·98 | 3·42 | ·147 | 4·95 | 2·97 | 817 | — |
| 284 | 8·25 | 3·59 | ·182 | 4·48 | 4·07 | — | — | 8·20 | 3·18 | ·147 | 4·57 | 3·21 | 7,751 | — |
| Average | 8·01 | 3·40 | ·166 | 4·33 | 4·01 | 2,472 | 860 | 8·02 | 3·40 | ·157 | 4·57 | 3·34 | 1,331 | 304 |

| Left Fore. | | | | | | | Left Hind. | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Solids not Fat. Per Cent. | Fat. Per Cent. | Chloride. Per Cent. | Lactose. Per Cent. | Chloride-lactose Index. | Cells (thousands per ml.). | Bacteria. | Solids not Fat. Per Cent. | Fat. Per Cent. | Chloride. Per Cent. | Lactose. Per Cent. | Chloride-lactose Index. | Cells (thousands per ml.). | Bacteria. |
| 8·96 | 2·88 | ·132 | 4·38 | 3·01 | — | 120 | 8·15 | 3·72 | ·122 | 4·86 | 2·50 | — | 10 |
| 7·73 | 2·89 | ·111 | 4·38 | 2·54 | 18 | 10 | 8·09 | 2·90 | ·116 | 4·38 | 2·66 | 503 | 30 |
| 7·71 | 3·26 | ·116 | 4·76 | 2·45 | 41 | 10 | 7·78 | 3·02 | ·137 | 4·76 | 2·87 | 990 | 30 |
| 7·87 | 3·48 | ·132 | 4·95 | 2·66 | 65 | 0 | 7·98 | 3·42 | ·127 | 4·76 | 2·66 | 852 | 10 |
| 8·20 | 3·44 | ·127 | 4·76 | 2·66 | 467 | 10 | 8·21 | 3·59 | ·132 | 4·29 | 3·07 | 195 | 0 |
| 8·21 | 3·50 | ·147 | 4·67 | 3·15 | 136 | 10 | 8·22 | 3·38 | ·137 | 4·48 | 3·05 | 1,302 | 0 |
| 8·37 | 3·85 | ·147 | 4·57 | 3·21 | 112 | 10 | 8·29 | 3·86 | ·147 | 4·57 | 3·21 | 880 | 0 |
| 8·50 | 4·15 | ·152 | 4·29 | 3·54 | 77 | 0 | 8·46 | 4·33 | ·161 | 4·57 | 3·52 | 1,166 | 5,800 |
| 8·32 | 4·17 | ·167 | 4·48 | 3·73 | 95 | — | 8·30 | 4·20 | ·161 | 4·38 | 3·68 | 2,249 | — |
| 8·25 | 3·84 | ·167 | — | — | 89 | 0 | 8·44 | 3·90 | ·152 | — | — | 527 | 100 |
| 8·21 | 3·46 | ·140 | 4·58 | 2·99 | 122 | 19 | 8·17 | 3·57 | ·139 | 4·56 | 3·02 | 963 | 664 |
| 8·07 | 3·16 | ·162 | 4·58 | 3·54 | 1,970 | — | 8·32 | 3·37 | — | — | — | 1,065 | — |
| 8·04 | 3·18 | ·152 | 4·48 | 3·17 | 3,024 | — | 8·07 | 3·55 | ·147 | 4·57 | 3·21 | 2,414 | — |
| 7·90 | 3·28 | ·162 | 4·29 | 3·78 | 639 | 5,000 | 7·95 | 3·38 | ·157 | 4·29 | 3·66 | 1,284 | 3,000 |
| 7·93 | 3·41 | ·172 | 4·00 | 4·30 | 965 | 2,400 | 7·95 | 3·26 | ·152 | 4·10 | 3·71 | 987 | 600 |
| 7·91 | 3·33 | ·177 | — | — | 432 | — | 7·89 | 3·59 | ·157 | — | — | 538 | — |
| 7·90 | 3·43 | ·182 | 4·29 | 4·25 | 880 | 1,200 | 7·91 | 3·55 | ·177 | 4·29 | 4·13 | 550 | 200 |
| 8·01 | 3·89 | ·182 | 4·09 | 4·48 | 1,550 | 1,500 | 8·08 | 3·79 | ·192 | 4·09 | 4·70 | 1,361 | 750 |
| 8·06 | 3·48 | ·197 | 3·90 | 5·06 | 3,438 | 1,000 | 8·11 | 3·66 | ·203 | 4·29 | 4·72 | 1,249 | 500 |
| 8·27 | 3·53 | ·208 | 4·57 | 4·54 | 1,189 | 2,500 | 8·39 | 3·70 | ·187 | 4·29 | 4·37 | 947 | 160 |
| 8·72 | 3·64 | ·172 | 4·95 | 3·48 | — | 2,000 | 8·85 | 3·80 | ·182 | 4·15 | 3·55 | — | 600 |
| 8·04 | 3·36 | ·177 | 4·35 | 4·07 | 1,567 | 2,229 | 8·12 | 3·52 | ·173 | 4·38 | 4·01 | 1,155 | 830 |
| 8·16 | 3·71 | ·147 | 4·57 | 3·21 | — | — | 8·18 | 4·21 | ·162 | 4·57 | 3·31 | — | — |
| 7·85 | 3·20 | ·162 | 4·00 | 4·05 | 870 | 1,000 | 7·86 | 3·27 | ·147 | 4·38 | 3·35 | 1,201 | 200 |
| 8·01 | 3·02 | ·167 | 4·10 | 4·08 | 657 | 1,000 | 7·97 | 3·32 | 162 | 4·57 | 3·31 | 1,379 | 100 |
| 7·97 | 3·22 | ·172 | 3·91 | 4·40 | 840 | 2,000 | 8·02 | 3·29 | ·172 | 4·10 | 4·20 | 538 | 500 |
| 7·88 | 3·47 | ·177 | — | — | 337 | 1,000 | 8·00 | 3·46 | ·142 | — | — | 1,604 | 200 |
| 7·81 | 3·56 | ·162 | 4·48 | 3·62 | 1,009 | 2,000 | 7·89 | 3·49 | ·152 | 4·29 | 3·54 | 314 | 800 |
| 7·78 | 3·68 | ·142 | 4·76 | 2·98 | 101 | — | 7·77 | 3·33 | ·137 | 4·76 | 2·87 | 148 | — |
| 7·94 | 3·07 | ·172 | 4·57 | 3·77 | 1,858 | — | 8·05 | 3·17 | ·137 | 4·48 | 3·05 | 1,343 | — |
| 8·17 | 3·32 | ·157 | 4·29 | 3·66 | 200 | — | 8·10 | 2·96 | ·182 | 4·38 | 4·16 | 1,308 | — |
| 8·26 | 3·58 | ·152 | 4·29 | 3·54 | 1,544 | — | 8·38 | 3·54 | ·177 | 4·76 | 3·72 | 1,077 | — |
| 7·99 | 3·38 | ·161 | 4·33 | 3·70 | 824 | 1,400 | 8·02 | 3·44 | ·157 | 4·48 | 3·50 | 990 | 360 |

← 197-198a 197-198b

COW 7910 (1).

| Days after Calving. | Right Fore. Solids not Fat. Per Cent. | Fat. Per Cent. | Chloride. Per Cent. | Lactose. Per Cent. | Chloride-lactose Index. | Cells (thousands per ml.). | Bacteria. | Right Hind. Solids not Fat. Per Cent. | Fat. Per Cent. | Chloride. Per Cent. | Lactose. Per Cent. | Chloride-lactose Index. | Cells (thousands per ml.). | Bacteria. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **First Lactation.** | | | | | | | | | | | | | | |
| 32 | 8·71 | 5·12 | ·101 | — | — | — | 40 | 8·96 | 5·34 | ·061 | — | — | — | 10 |
| 60 | 8·77 | 5·43 | ·101 | 4·57 | 2·22 | — | — | 8·81 | 5·14 | ·106 | 4·76 | 2·23 | — | 10 |
| 88 | 8·52 | 4·78 | ·157 | 5·14 | 3·05 | — | 10 | 8·86 | 4·87 | ·092 | 5·33 | 1·71 | — | 20 |
| 116 | 8·75 | 4·43 | ·096 | 5·24 | 1·84 | 450 | 0 | 8·94 | 4·38 | ·086 | 4·95 | 1·74 | 71 | 0 |
| 144 | 8·47 | 4·21 | ·096 | 4·86 | 1·98 | 59 | 20 | 8·42 | 4·60 | ·111 | 5·33 | 2·09 | 379 | 60 |
| 172 | 8·43 | 4·85 | ·111 | 5·05 | 2·21 | 148 | 10 | 8·40 | 4·94 | ·101 | 5·33 | 1·90 | 550 | 10 |
| 200 | 8·59 | 5·24 | ·106 | 4·86 | 2·19 | 491 | 10 | 8·71 | 4·82 | ·111 | 4·76 | 2·34 | 639 | 0 |
| 228 | 8·75 | 4·83 | ·127 | 4·86 | 2·61 | 219 | 0 | 8·81 | 4·91 | ·127 | 4·86 | 2·61 | 302 | 0 |
| 256 | 8·56 | 5·10 | ·127 | 4·57 | 2·77 | 402 | 0 | 8·83 | 5·36 | ·116 | 4·76 | 2·45 | 456 | 0 |
| 284 | 8·82 | 5·78 | ·161 | 4·29 | 3·75 | 367 | 0 | 8·99 | 5·53 | ·157 | 4·48 | 3·50 | 8,520 | 10 |
| Average | 8·64 | 4·95 | ·118 | 4·83 | 2·51 | 305 | 10 | 8·78 | 4·94 | ·107 | 4·95 | 2·29 | 1,559 | 12 |
| **Second Lactation.** | | | | | | | | | | | | | | |
| 32 | 8·95 | 4·74 | ·101 | 5·14 | 1·97 | 272 | — | 9·05 | 4·34 | ·127 | 5·24 | 2·42 | 195 | — |
| 60 | 9·33 | 4·33 | ·111 | 5·05 | 2·21 | 362 | — | 9·41 | 4·27 | ·122 | 5·24 | 2·32 | 615 | — |
| 88 | 9·02 | 4·69 | ·101 | 4·95 | 2·05 | 183 | — | 9·05 | 5·12 | ·106 | 4·95 | 2·15 | 219 | — |
| 116 | 8·54 | 3·99 | ·142 | 4·76 | 2·98 | 450 | 2,000 | 8·61 | 4·00 | ·132 | 4·67 | 2·82 | 142 | — |
| 144 | 8·62 | 4·35 | ·142 | 4·19 | 3·38 | 172 | — | 8·57 | 4·19 | ·142 | 4·57 | 3·10 | 450 | 1,000 |
| 172 | 8·61 | 5·13 | ·132 | 4·76 | 2·77 | 142 | 10,000 | 8·67 | 4·61 | ·142 | 4·76 | 2·98 | 314 | 2,400 |
| 200 | 8·41 | 4·73 | ·172 | 4·10 | 4·20 | 160 | 5,000 | 8·41 | 4·58 | ·152 | 4·48 | 3·39 | 752 | 5,000 |
| 228 | 8·52 | 5·16 | ·167 | 4·67 | 3·58 | 41 | 400 | 8·52 | 5·07 | ·152 | 4·76 | 3·19 | 59 | 3,600 |
| 256 | 8·27 | 5·03 | — | — | — | — | — | 8·32 | 5·02 | — | — | — | — | — |
| 284 | 8·50 | 5·26 | — | — | — | — | — | 8·55 | 5·17 | — | — | — | — | — |
| Average | 8·77 | 4·62 | ·134 | 4·70 | 2·89 | 223 | 4,350 | 8·81 | 4·54 | ·134 | 4·83 | 2·80 | 343 | 3,000 |

7910 (1).

| Left Fore. | | | | | | | Left Hind. | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Solids not Fat. Per Cent. | Fat. Per Cent. | Chloride. Per Cent. | Lactose. Per Cent. | Chloride-lactose Index. | Cells (thousands per ml.). | Bacteria. | Solids not Fat. Per Cent. | Fat. Per Cent. | Chloride. Per Cent. | Lactose. Per Cent. | Chloride-lactose Index. | Cells (thousands per ml.). | Bacteria. |
| 8·92 | 5·15 | ·071 | — | — | — | 10 | 9·01 | 5·35 | ·081 | 5·71 | 1·43 | — | 30 |
| 8·74 | 5·00 | ·091 | 4·47 | 2·04 | — | — | 8·80 | 5·30 | ·086 | 4·57 | 1·88 | — | — |
| 8·33 | 5·08 | ·116 | 4·86 | 2·40 | — | 0 | 8·51 | 4·98 | ·116 | 4·86 | 2·40 | — | 20 |
| 8·54 | 4·27 | ·091 | 4·95 | 1·84 | 828 | 130 | 8·73 | 4·45 | ·101 | 4·86 | 2·08 | 213 | 110 |
| 8·40 | 4·40 | ·101 | 4·38 | 2·31 | 59 | 120 | 8·49 | 4·64 | ·106 | 5·71 | 1·86 | 36 | 120 |
| 8·48 | 4·78 | ·111 | 4·95 | 2·25 | 213 | 80 | 7·91 | 4·80 | ·096 | 5·71 | 1·69 | 47 | 130 |
| 8·67 | 5·11 | — | 4·76 | — | — | — | 8·76 | 5·00 | 116 | 4·76 | 2·45 | — | 0 |
| 8·73 | 4·88 | ·106 | 4·95 | 2·15 | 359 | 10 | 8·96 | 4·87 | ·122 | 4·95 | 2·46 | 290 | 0 |
| 8·90 | 4·81 | ·116 | 4·76 | 2·45 | 420 | 0 | 8·90 | 5·12 | ·122 | 4·95 | 2·46 | 450 | 0 |
| 9·07 | 5·75 | ·142 | 4·76 | 2·98 | 302 | 20 | 9·10 | 5·77 | ·152 | 4·86 | 3·13 | 160 | 0 |
| 8·67 | 4·89 | ·105 | 4·76 | 2·30 | 363 | 46 | 8·70 | 5·01 | ·110 | 5·09 | 2·18 | 199 | 46 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9·03 | 4·64 | ·106 | 5·33 | 2·00 | 18 | — | 9·20 | 4·40 | ·101 | 5·52 | 1·83 | 30 | — |
| 9·44 | 4·16 | ·101 | 5·24 | 1·93 | 160 | — | 9·57 | 4·51 | ·091 | 5·33 | 1·71 | 107 | — |
| 9·16 | 4·80 | ·096 | 5·24 | 1·84 | 118 | — | 9·24 | 5·07 | ·081 | 5·24 | 1·55 | 30 | — |
| 8·82 | 4·11 | ·111 | 5·05 | 2·21 | 41 | 0 | 8·75 | 4·09 | ·101 | 5·05 | 2·01 | 30 | — |
| 8·80 | 4·54 | ·147 | 5·05 | 2·91 | 101 | — | 8·86 | 4·58 | ·122 | 5·52 | 2·20 | 83 | — |
| 8·75 | 5·29 | ·116 | 5·05 | 2·31 | 47 | 1,200 | 8·81 | 5·13 | ·116 | 4·76 | 2·45 | 36 | 500 |
| 8·68 | 5·17 | ·147 | 4·38 | 3·35 | 83 | 0 | 8·68 | 5·10 | ·132 | 4·86 | 2·71 | 112 | 100 |
| 8·74 | 5·89 | ·157 | 4·38 | 3·58 | 47 | 150 | 8·88 | 5·91 | ·137 | 4·76 | 2·87 | 101 | 1,600 |
| 8·45 | 5·35 | — | — | — | — | — | 8·57 | 5·54 | — | — | — | — | — |
| 8·75 | 5·99 | — | — | — | — | — | 8·73 | 5·65 | — | — | — | — | — |
| 8·92 | 4·81 | ·123 | 4·97 | 2·52 | 77 | 338 | 8·92 | 4·90 | ·110 | 5·13 | 2·17 | 66 | 733 |

← 199-200a

199-200b

## COW 7910 (2).

| Days after Calving. | Right Fore. | | | | | | | Right Hind. | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Solids not Fat. Per Cent. | Fat. Per Cent. | Chloride. Per Cent. | Lactose. Per Cent. | Chloride-lactose Index. | Cells (thousands per ml.). | Bacteria. | Solids not Fat. Per Cent. | Fat. Per Cent. | Chloride. Per Cent. | Lactose. Per Cent. | Chloride-lactose Index. | Cells (thousands per ml.). | Bacteria. |
| **THIRD LACTATION.** | | | | | | | | | | | | | | |
| 32 | 8·95 | 4·05 | ·111 | 4·86 | 2·29 | 325 | 5,000 | 8·89 | 4·27 | ·091 | 4·95 | 1·84 | 1,563 | 2,000 |
| 60 | 8·58 | 3·78 | ·101 | 4·85 | 2·08 | — | 600 | 8·33 | 5·34 | ·091 | 4·95 | 1·84 | — | 500 |
| 88 | 8·32 | 5·05 | ·132 | 4·48 | 2·94 | 722 | 500 | 8·39 | 4·55 | ·122 | 5·05 | 2·41 | 1,320 | 200 |
| 116 | 8·83 | 4·32 | ·122 | 4·48 | 2·71 | 503 | 1,500 | 8·89 | 3·84 | ·132 | 4·76 | 2·77 | 610 | 2,000 |
| 144 | 8·62 | 3·76 | ·142 | 4·76 | 2·98 | 1,107 | 1,000 | 8·84 | 4·02 | ·106 | 5·14 | 2·07 | 1,716 | 1,000 |
| 172 | 8·67 | 4·24 | ·132 | 4·57 | 2·88 | 758 | 1,000 | 8·71 | 4·41 | ·111 | 4·48 | 2·49 | 1,083 | 800 |
| 200 | 8·69 | 4·41 | ·142 | 4·76 | 2·98 | 467 | 1,500 | 8·87 | 4·57 | ·111 | 4·95 | 2·25 | 453 | 1,000 |
| 228 | 8·45 | 4·90 | ·147 | 4·76 | 3·09 | 116 | — | 8·63 | 5·14 | ·142 | 4·95 | 2·86 | 450 | — |
| 256 | 9·70 | 5·73 | ·157 | 4·95 | 3·17 | 207 | — | 8·74 | 5·42 | ·116 | 4·95 | 2·35 | 1,196 | — |
| 284 | 8·40 | 4·47 | ·122 | 4·76 | 2·55 | 959 | — | 8·63 | 4·80 | ·122 | 4·86 | 2·40 | 117 | — |
| AVERAGE | 8·70 | 4·39 | ·131 | 4·72 | 2·77 | 579 | 1,586 | 8·69 | 4·58 | ·114 | 4·90 | 2·34 | 941 | 1,071 |
| **FOURTH LACTATION.** | | | | | | | | | | | | | | |
| 32 | 8·72 | 3·78 | ·091 | 4·76 | 1·91 | 479 | 3,000 | 8·68 | 4·46 | ·101 | 5·14 | 1·97 | 793 | 3,000 |
| 60 | 8·60 | 3·17 | ·152 | 4·95 | 3·07 | 491 | — | 8·60 | 3·55 | ·127 | 5·14 | 2·47 | 580 | — |
| 88 | 8·15 | 3·21 | ·106 | 4·86 | 2·18 | 83 | — | 8·22 | 3·82 | ·116 | 4·95 | 2·36 | 172 | — |
| 116 | 8·16 | 4·35 | ·142 | 4·76 | 2·98 | 574 | 5,000 | 8·02 | 4·37 | ·116 | 4·95 | 2·36 | 1,124 | 1,000 |
| 144 | 8·65 | 4·63 | ·142 | 4·48 | 3·17 | 219 | 1,500 | 8·67 | 3·86 | ·147 | 4·38 | 3·36 | 438 | 1,000 |
| 172 | 8·58 | 3·09 | ·132 | 4·95 | 2·67 | 509 | 10,000 | 8·57 | 3·18 | ·147 | 5·14 | 2·86 | 379 | 3,000 |
| 200 | 8·16 | 3·31 | ·137 | 4·95 | 2·77 | 1,207 | — | 8·29 | 2·69 | ·137 | 4·86 | 2·82 | 610 | — |
| 228 | 8·54 | 4·56 | ·172 | 4·57 | 3·76 | 657 | — | 8·68 | 4·55 | ·157 | 4·86 | 3·23 | 899 | — |
| 256 | 7·73 | 3·17 | ·223 | 4·48 | 4·98 | 1,077 | — | 8·52 | 5·37 | ·051 | 4·76 | 1·07 | 846 | 1,000 |
| 284 | 8·36 | 4·19 | ·147 | 4·57 | 3·22 | 243 | 1,000 | 8·47 | 3·90 | ·096 | 4·86 | 1·97 | 1,828 | — |
| AVERAGE | 8·42 | 3·71 | ·144 | 4·73 | 3·07 | 554 | 4,100 | 8·48 | 3·94 | ·120 | 4·90 | 2·45 | 767 | 1,800 |

910 (2).

| Left Fore. | | | | | | | Left Hind. | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Solids not Fat. Per Cent. | Fat. Per Cent. | Chloride. Per Cent. | Lactose. Per Cent. | Chloride-lactose Index. | Cells (thousands per ml.). | Bacteria. | Solids not Fat. Per Cent. | Fat. Per Cent. | Chloride. Per Cent. | Lactose. Per Cent. | Chloride-lactose Index. | Cells (thousands per ml.). | Bacteria. |
| 8·90 | 3·93 | ·086 | 4·95 | 1·74 | 47 | 30 | 9·07 | 4·46 | ·081 | 5·01 | 1·62 | 89 | 60 |
| 8·54 | 3·78 | ·081 | 4·95 | 1·64 | — | 20 | 8·36 | 5·68 | ·086 | 4·76 | 1·81 | — | 50 |
| 8·28 | 4·64 | ·116 | 4·76 | 2·45 | 36 | 0 | 8·35 | 4·67 | ·116 | 5·14 | 2·27 | 734 | 100 |
| 8·95 | 3·93 | ·106 | 5·05 | 2·11 | 278 | 100 | 8·83 | 4·09 | ·127 | — | — | 325 | 1,000 |
| 8·85 | 4·06 | ·111 | 5·14 | 2·17 | 77 | 70 | 8·76 | 4·13 | ·111 | 4·86 | 2·29 | 1,438 | 2,000 |
| 9·02 | 4·38 | ·142 | 4·29 | 3·31 | 166 | 10 | 8·89 | 4·50 | ·132 | 4·57 | 2·88 | 420 | 1,500 |
| 9·00 | 4·54 | ·122 | 4·76 | 2·55 | 59 | 30 | 8·73 | 4·66 | ·127 | 4·57 | 2·77 | 166 | 1,500 |
| 8·65 | 5·39 | ·152 | 4·95 | 3·07 | 373 | — | 8·58 | 5·26 | ·122 | 4·95 | 2·46 | 636 | — |
| 8·74 | 5·45 | ·122 | 4·86 | 2·50 | 645 | — | 8·66 | 5·07 | ·127 | 4·76 | 2·66 | 722 | — |
| 8·59 | 5·66 | ·127 | 4·76 | 2·66 | 225 | — | 8·71 | 5·24 | ·106 | 4·76 | 2·23 | 515 | — |
| 8·75 | 4·46 | ·117 | 4·85 | 2·32 | 212 | 37 | 8·69 | 4·74 | ·114 | 4·82 | 2·33 | 558 | 650 |
| 8·87 | 3·93 | ·076 | 5·05 | 1·50 | 228 | 80 | 9·03 | 5·06 | ·081 | 5·33 | 1·52 | 1,087 | 3,000 |
| 8·75 | 3·79 | ·132 | 4·76 | 2·77 | 71 | — | 8·68 | 3·65 | ·127 | 5·05 | 2·51 | 1,009 | — |
| 8·50 | 4·39 | ·106 | 4·95 | 2·14 | 47 | — | 8·26 | 3·09 | ·116 | 5·05 | 2·30 | 491 | — |
| 8·23 | 4·08 | ·142 | 4·95 | 2·87 | 254 | 50 | 8·08 | 3·98 | ·132 | 4·76 | 2·77 | 755 | 5,000 |
| 8·51 | 3·83 | ·127 | 4·48 | 2·83 | 996 | 1,500 | 8·46 | 3·53 | ·157 | — | — | 343 | 800 |
| 8·63 | 3·13 | ·142 | 5·05 | 2·81 | 988 | 5,000 | 8·54 | 3·07 | ·147 | 4·86 | 3·02 | 828 | 3,000 |
| 8·41 | 2·85 | ·127 | 5·05 | 2·51 | 1,367 | — | 8·34 | 3·27 | ·132 | 4·95 | 3·67 | 1,038 | — |
| 8·54 | 4·21 | ·142 | 5·05 | 2·81 | 978 | — | 8·36 | 3·64 | ·147 | 4·86 | 3·02 | 1,065 | — |
| 8·26 | 4·41 | ·177 | 4·95 | 3·57 | 2,172 | 2,300 | 8·37 | 4·87 | ·162 | 4·57 | 3·70 | 1,201 | 4,000 |
| 8·58 | 4·79 | ·147 | 4·67 | 3·15 | 1,680 | — | 8·33 | 4·11 | ·152 | 4·57 | 3·32 | 1,037 | — |
| 8·56 | 3·89 | ·132 | 4·90 | 2·70 | 878 | 1,286 | 8·50 | 3·83 | ·135 | 4·89 | 2·76 | 885 | 3,160 |

← 201-202a

SECRETION OF ABNORMAL MILK BY QUARTERS FREE FROM KNOWN PATHOGENS

COW 7912 (1).

| Days after Calving. | Right Fore. | | | | | | | Right Hind. | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Solids not Fat. Per Cent. | Fat. Per Cent. | Chloride. Per Cent. | Lactose. Per Cent. | Chloride-lactose Index. | Cells (thousands per ml.). | Bacteria. | Solids not Fat. Per Cent. | Fat. Per Cent. | Chloride. Per Cent. | Lactose. Per Cent. | Chloride-lactose Index. | Cells (thousands per ml.). | Bacteria. |
| **First Lactation.** | | | | | | | | | | | | | | |
| 32 | 8·84 | 4·55 | ·106 | 4·95 | 2·15 | — | 10 | 8·58 | 3·90 | ·111 | 4·66 | 2·39 | — | 10 |
| 60 | 8·89 | 4·01 | ·116 | 4·29 | 2·72 | — | 30 | 8·95 | 3·28 | ·101 | 4·29 | 2·36 | — | 0 |
| 88 | 8·72 | 3·76 | ·046 | 5·43 | 0·84 | — | 0 | 8·71 | 3·92 | ·056 | 5·24 | 1·06 | — | 0 |
| 116 | 8·73 | 4·66 | ·091 | 4·76 | 1·92 | — | 0 | 8·93 | 3·29 | ·091 | 4·85 | 1·88 | — | 0 |
| 144 | 8·84 | 4·08 | ·091 | 5·05 | 1·81 | 24 | 0 | 8·76 | 4·11 | ·091 | 5·81 | 1·57 | — | 20 |
| 172 | 8·75 | 4·48 | ·101 | — | — | — | 0 | 8·53 | 3·91 | ·116 | — | — | — | 40 |
| 200 | 8·71 | 4·44 | ·076 | 5·24 | 1·45 | 101 | 30 | 8·50 | 4·62 | ·101 | 4·19 | 2·42 | 1,680 | 30 |
| 228 | 8·42 | 4·18 | ·076 | 5·33 | 1·43 | 18 | 0 | 8·35 | 4·50 | ·122 | 4·48 | 2·71 | 1,231 | 530 |
| 256 | 8·63 | 3·83 | ·086 | 5·14 | 1·68 | 24 | 50 | 8·61 | 4·23 | ·101 | 5·43 | 1·87 | 781 | 0 |
| 284 | 8·68 | 4·55 | ·137 | 4·57 | 2·99 | 95 | 10 | 8·70 | 4·63 | ·091 | 5·14 | 1·77 | 1,124 | 30 |
| Average | 8·73 | 4·23 | ·093 | 4·97 | 1·89 | 53 | 13 | 8·67 | 3·98 | ·098 | 4·90 | 2·00 | 1,079 | 66 |
| **Second Lactation.** | | | | | | | | | | | | | | |
| 32 | 8·89 | 5·50 | ·096 | 4·86 | 1·98 | 41 | — | 8·77 | 4·36 | ·122 | 4·86 | 2·50 | 77 | — |
| 60 | 8·75 | 5·21 | — | — | — | — | — | 8·78 | 4·58 | — | — | — | — | — |
| 88 | 8·75 | 5·00 | ·106 | 4·86 | 2·19 | 462 | 500 | 8·71 | 4·11 | ·116 | 4·76 | 2·45 | 621 | 200 |
| 116 | 8·70 | 4·59 | ·122 | 4·48 | 2·71 | 3,195 | 300 | 8·64 | 4·42 | ·142 | 4·76 | 2·98 | 846 | 600 |
| 144 | 8·57 | 4·71 | ·137 | 4·95 | 2·76 | 5,136 | 400 | 8·52 | 4·46 | ·127 | 4·86 | 2·60 | 1,550 | 1,200 |
| 172 | 8·28 | 4·70 | ·172 | 4·29 | 4·01 | 7,160 | 100 | 8·37 | 4·15 | ·127 | 4·76 | 2·66 | 183 | 600 |
| 200 | 8·49 | 5·08 | ·157 | 4·48 | 3·50 | 14,438 | 100 | 8·62 | 4·95 | ·137 | 4·48 | 3·05 | 639 | 750 |
| 228 | 8·64 | 4·95 | ·167 | 4·76 | 3·51 | 3,266 | 150 | 8·61 | 4·63 | ·157 | 4·66 | 3·37 | 1,657 | 200 |
| 256 | 8·71 | 4·85 | ·172 | 4·95 | 3·48 | 5,503 | 1,500 | 8·89 | 4·88 | ·157 | 5·24 | 3·00 | 1,438 | 1,000 |
| 284 | 8·73 | 4·70 | ·147 | 4·76 | 3·09 | 4,337 | 5,000 | 8·93 | 5·06 | ·106 | 5·24 | 2·03 | 1,973 | 250 |
| Average | 8·67 | 4·97 | ·142 | 4·71 | 3·03 | 4,837 | 1,006 | 8·67 | 4·51 | ·132 | 4·85 | 2·74 | 998 | 488 |

203-204b →

(1).

| Left Fore. | | | | | | | Left Hind. | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Solids not Fat. Per Cent. | Fat. Per Cent. | Chloride. Per Cent. | Lactose. Per Cent. | Chloride-lactose Index. | Cells (thousands per ml.). | Bacteria. | Solids not Fat. Per Cent. | Fat. Per Cent. | Chloride. Per Cent. | Lactose. Per Cent. | Chloride-lactose Index. | Cells (thousands per ml.). | Bacteria. |
| 9·04 | 4·35 | ·111 | 4·95 | 2·25 | — | 0 | 9·03 | 4·84 | ·106 | — | — | — | 260 |
| 8·78 | 4·14 | ·116 | 5·24 | 2·22 | — | 10 | 8·88 | 3·84 | ·137 | 4·57 | 2·99 | — | 0 |
| 8·76 | 3·78 | ·066 | 5·52 | 1·19 | — | 0 | 8·58 | 4·09 | ·061 | 5·81 | 1·05 | — | 70 |
| 8·96 | 4·79 | ·111 | 4·38 | 2·54 | — | 0 | 8·85 | 4·28 | ·086 | 4·95 | 1·74 | — | — |
| 8·59 | 3·89 | ·091 | 5·43 | 1·68 | 4,083 | 270 | 8·76 | 4·30 | ·086 | 5·52 | 1·56 | — | 110 |
| 8·38 | 4·30 | ·192 | — | — | — | 70 | 8·59 | 4·14 | ·081 | — | — | — | — |
| 8·28 | 4·88 | ·106 | — | — | 2,308 | 40 | 8·73 | 4·59 | ·081 | 5·14 | 1·58 | 533 | 40 |
| 8·43 | 4·31 | ·116 | 4·95 | 2·35 | 53 | 80 | 8·32 | 4·53 | ·096 | 5·06 | 1·90 | 805 | 10 |
| 8·59 | 4·27 | ·106 | 5·14 | 2·07 | 49 | 10 | 7·99 | 4·16 | ·122 | 5·33 | 2·28 | 752 | 50 |
| 8·62 | 4·57 | ·122 | 4·48 | 2·71 | 1,451 | 0 | 8·67 | 4·73 | ·106 | 4·95 | 2·15 | 1,485 | 90 |
| 8·70 | 4·28 | ·114 | 5·01 | 2·13 | 1,589 | 48 | 8·66 | 4·33 | ·096 | 5·17 | 1·91 | 894 | 85 |
| 8·72 | 4·10 | ·147 | 4·57 | 3·21 | 101 | — | 8·78 | 4·73 | ·127 | 4·76 | 2·66 | 160 | — |
| 8·34 | 5·00 | — | — | — | — | — | 8·73 | 5·08 | — | — | — | — | — |
| 8·48 | 4·59 | ·137 | 4·76 | 2·87 | 1,615 | 250 | 8·68 | 4·33 | ·111 | 5·14 | 2·17 | 243 | 0 |
| 8·44 | 4·09 | ·137 | 4·95 | 2·76 | 2,195 | 300 | 8·73 | 4·72 | ·106 | 4·95 | 2·15 | 101 | 400 |
| 8·37 | 4·44 | ·147 | 5·24 | 2·84 | 1,225 | 3,000 | 8·67 | 4·74 | ·116 | 4·76 | 2·45 | 219 | 200 |
| 8·28 | 4·22 | ·167 | 4·76 | 3·51 | 852 | 300 | 8·39 | 4·44 | ·132 | 4·38 | 3·01 | 681 | 100 |
| 8·55 | 4·77 | ·152 | 4·28 | 3·55 | 781 | 250 | 8·48 | 4·69 | ·116 | 4·86 | 2·40 | 462 | 750 |
| 8·63 | 4·84 | ·157 | 5·05 | 3·11 | 965 | 500 | 8·65 | 4·76 | ·142 | 4·95 | 2·86 | 1,219 | 750 |
| 8·83 | 4·95 | ·142 | 4·76 | 2·98 | 402 | 1,200 | 8·83 | 4·95 | ·142 | 4·76 | 2·98 | 3,195 | 500 |
| 8·93 | 4·99 | ·127 | 5·24 | 2·42 | 965 | 2,000 | 8·93 | 4·99 | ·147 | 5·24 | 2·80 | 1,402 | 1,500 |
| 8·53 | 4·57 | ·146 | 4·85 | 3·03 | 1,011 | 967 | 8·68 | 4·72 | ·127 | 4·87 | 2·61 | 854 | 525 |

← 203-204a