REGULATIONS, DATED FIFTH DAY OF OCTOBER, 1951, MADE BY THE MINISTRY OF AGRICULTURE FOR NORTHERN IRELAND UNDER SECTION 4 OF THE MILK ACT (NORTHERN IRELAND) 1950.

1951. No. 189

The Ministry of Agriculture in exercise of the powers conferred on it by Section nine of the Milk Act (Northern Ireland) 1950, and of any other power enabling it in that behalf, hereby makes the following Regulations, that is to say :—

PART I

1. Short Title and Commencement. These Regulations may be cited as the Milk Regulations (Northern Ireland) 1951 and shall come into effect on the first day of November, 1951.

2. Interpretation. In these Regulations unless the context otherwise requires —

" Act " means the Milk Act (Northern Ireland) 1950 ;

" consumer " means any person to whom milk is supplied and who neither sells it nor uses it in the manufacture of milk products for sale ;

" dairy " means the premises in which milk is handled and from which milk is sold or distributed by a licensed producer or a licensed distributor ;

" cowshed " means the accommodation provided by a licensed producer for housing and milking or for the milking of the dairy herd ;

" dairy herd " or " herd " means the cows in respect of which a producer's licence has been granted ;

" handling " in relation to milk means any process of milking or of straining, cooling, receiving, pasteurising, storing, bottling of milk ;

" distributor's licence " means a licence for the purchase and resale of milk granted in accordance with the provisions of the Act and " licensed distributor " means the holder of such a licence ;

" producer's licence " means a licence for the production and sale of milk granted in accordance with the provisions of the Act and " licensed producer " means the holder of such a licence ;

" raw milk " means milk which has not been treated by heat ;

" retail container " means a container other than a bottle of a capacity not exceeding one quart ;

" sale " includes the supply of milk under any arrangements which may, for the time being, be in operation for free supply of milk to the consumer ;

" selling milk by retail " means selling it —

(*a*) to a person other than a licensed distributor or a manufacturer of milk products whose premises are registered under the Marketing of Dairy Produce Act (Northern Ireland) 1929 as amended,

(*b*) to such licensed distributor or manufacturer otherwise than for the purposes of his business as such ;

" selling milk by wholesale " means selling milk otherwise than by retail and " wholesaler " and " wholesaling " shall be construed accordingly ;

" tuberculin test " means a tuberculin test of an animal made by a Veterinary Surgeon or a Veterinary Officer of the Ministry in such manner as the Ministry may direct ;

" veterinary surgeon " means a person whose name appears in the Register of Veterinary Surgeons ;

Other expressions have the meanings respectively assigned to them in the Act.

3. The Interpretation Act 1889 as applied to Northern Ireland by the Interpretation Act (Northern Ireland) 1921 shall apply for the purposes of the interpretation of these Regulations as it applies for the purpose of the interpretation of an Act of Parliament.

PART II

LICENCES

General provisions relating to producers' licences and distributors' licences

4.—(1) Subject to the provisions of sub-paragraph (2) hereof

(*a*) A producer's licence or a distributor's licence granted by the Ministry under the Act on the 1st day of November, 1951, shall, unless suspended or revoked by the Ministry or surrendered by the holder, remain in force for a period of four years from that date and shall be renewable on the expiry of the said period and of each period of four years thereafter.

(*b*) A producer's licence or a distributor's licence granted by the Ministry under the Act on any day other than on the first day of a period of four years prescribed by sub-paragraph (*a*) of this paragraph shall, unless suspended or revoked by the Ministry or surrendered by the holder, remain in force until the end of the said period and shall be renewable thereafter as prescribed in sub-paragraph (*a*) of this paragraph.

(2) A licence granted on the 1st day of November, 1951, or on any date between that date and the 31st August, 1954, in respect of the production and sale of milk of Grade A (T.T.) milk shall, unless the herd from which the milk is produced shall in the meantime qualify for recognition as an attested herd, expire on the 31st day of August, 1954, and a licence granted on the 1st day of November, 1951, or on any date between that date and the 31st August, 1952, in respect of the production and sale of Grade B milk shall expire on the 31st day of August, 1952.

(3) Every producer's licence and every distributor's licence granted by the Ministry under the Act shall be subject to the conditions, so far as they are expressed to be applicable, set out in these Regulations.

(4) Applications for licences and the several licences referred to in the Act shall be in the form or to the effect as set forth in the First Schedule to these Regulations.

PART III

Provisions relating to premises used by a producer licensed for the purpose of production and sale of milk

5. The premises used by a licensed producer for the purposes of his business as a milk producer shall include a cowshed and a dairy, and the said cowshed and dairy shall be constructed in conformity with the requirements set out in the Second Schedule to these Regulations.

Provided that any premises being used by a licensed producer at the commencement of these Regulations which do not conform with the requirements of these Regulations may, notwithstanding their failure to conform with such requirements, continue to be so used for such period as the Ministry may allow.

PART IV

Provisions relating to the handling of milk on a licensed producer's premises

6.—(1) Where an animal shows evidence of any disease which is likely to affect the milk injuriously it shall be segregated from the rest of the herd or removed from the herd as the case may require, and while segregated or removed its milk shall not be sold.

(2) A licensed producer shall give an authorised officer such information as he may require as to the segregation or removal of animals and in the case of removal as to the manner in which any animal has been disposed of.

7.—(1) A licensed producer shall not use the cowshed for the housing of poultry or of animals other than those which comprise the dairy herd.

(2) A licensed producer shall —

(*a*) cause every part of the interior of the cowshed and the dairy including any fixtures or appliances therein to be kept in such a state of cleanliness as will prevent contamination of the milk,

(*b*) cause all manure or other matter to be removed from the cowshed at least once every day and so disposed of that no offensive odour from such manure or other matter can reach any part of the cowshed or dairy, and that no milk in the cowshed or dairy is exposed to contamination by dirt, dust or flies from such manure or other matter,

(*c*) cause the approaches to the cowshed and dairy to be kept clean.

8. A licensed producer shall take or cause to be taken the following precautions in connection with the milking of the cows :—

(1) No dry bedding or other dusty matter shall be moved in the cowshed during the milking or within half an hour before the milking commences in such a manner as to cause a risk of contamination of the milk.

(2) The milking shall be carried out in good and proper light.

(3) The hairs on the udders, flanks and hindquarters of each animal shall be kept short by clipping or otherwise and the flanks, tail and udders shall be kept free from dirt. Before milking the udders and teats shall be carefully washed with clean water and dried with clean cloths. The udders and teats shall be kept dry during the milking.

(4) Every person engaged in any process of production of milk shall keep himself and his outer clothing clean and in particular every person engaged in the milking of the cows shall thoroughly wash and dry his hands before milking and shall throughout the milking, as far as is practicable, keep his hands clean, dry and free from contamination.

(5) The first few streams of foremilk from each teat shall be separately drawn into a receptacle for immediate visual examination, and shall subsequently be discarded in such a manner as to avoid the risk of the infection of the herd.

(6) Milk which on visual examination appears to contain colostrum shall not be included in the supply of milk intended for sale.

9. As soon as practicable after milking, the milk from each cow shall be removed from the cowshed to the dairy (due care being taken during such removal to protect the milk from any source of contamination), and cooled to the lowest temperature practicable, having regard to the temperature of the water available on the premises.

10. Save for any purpose connected with the despatch of milk to a purchaser, milk shall not be kept while in the possession of the licensed producer elsewhere than in the dairy and while being so kept shall be effectively protected from the direct rays of the sun and from contamination from any source. The dairy shall not be used for any purpose other than a purpose connected with the handling of milk.

11. Milk intended for sale by wholesale by the holder of a Milk Licence shall be placed in churns which have been cleansed in accordance with these Regulations. The churns shall be —

(*a*) labelled with the name and address of the licensed producer, and the day of production (with the words " morning " " evening " or " mixed milk " according to the time of milking) or

(*b*) otherwise marked to the same effect.

12. The provisions of this Part of the Regulations shall apply subject to the special requirements set out in Part VI as applicable to licensed producers of Grade A (T.T.) milk or Grade B milk.

PART V

Provisions relating to the cleansing and storage of vessels and appliances

13. A licensed producer or a licensed distributor shall not use or cause to be used in connection with his milk business, any vessel or appliance, any part of the interior surface of which is rusty or is not capable of being readily cleansed or any vessel or appliance used for any purpose other than a purpose connected with the production and distribution of milk.

14. A licensed producer or a licensed distributor shall ensure that every vessel, including the lid, used for containing milk shall, immediately before use by him, be in a state of thorough cleanliness, and if he has any reason to believe that since last being used for containing milk, any such vessel has not been cleansed in accordance with these Regulations or has, subsequent to such cleansing, been rendered unclean, shall cause the vessel to be cleansed, or recleansed as the case may be, and if he is unable to cleanse or recleanse the vessel, he shall not use it for containing milk.

15.—(1) A licensed producer or a licensed distributor shall, as soon as practicable after use, cause any appliance used by him for any purpose for which it is brought into contact with milk to be cleansed in accordance with the provisions of this Regulation and to be, immediately before use, in a state of thorough cleanliness.

(2) All vessels and appliances after cleansing shall, when not in use, be stored in the dairy.

(3) All caps, discs and metal foil shall be kept in a clean place and protected from contamination.

16.—(1) For the purpose of cleansing or recleansing any vessel or appliance in accordance with the provisions of this Regulation,

(*a*) such vessel or appliance shall, as soon after use as is practicable, be thoroughly rinsed with clean, cold or lukewarm water so that as far as practicable all traces of milk or milk residues have been removed from the vessel or appliance, and

(*b*) before it is used again, shall be washed and thereafter be sterilised by scalding with boiling water or steam or by the use of an oxidising or preservative agent approved by the Ministry. All traces of the said oxidising or preservative agent shall be removed by thorough rinsing with clean boiling water, and

(*c*) no oxidising or preservative agent, other than one approved as aforesaid shall be used.

17.—(1) A licensed distributor, other than a distributor who pasteurises milk, on despatching empty after they have contained milk any churns shall, as soon after emptying as practicable, cause such churns to be rinsed with clean water and to be securely closed. A licensed distributor who carries on the process of pasteurising milk shall as soon after emptying as practicable cause such churns to be washed and sterilised.

(2) A licensed distributor on returning empty after it has contained milk any milk tanker shall cause it to be thoroughly rinsed with clean water, as soon after emptying as practicable, and securely closed before it leaves his premises.

18. The provisions of this part of the Regulations shall apply subject to the special requirements set out in Part VI as applicable to licensed producers of Grade A (T.T.) milk and Grade B milk, and set out in Part VII as applicable to licensed distributors on whose premises milk is pasteurised.

Part VI

Special provisions applicable to the holder of a Grade A (T.T.) producer's licence or a Grade B producer's licence

19. For the purposes of Section one (3) (*a*) (i) of the Act each animal in the herd owned by the holder of a Grade A (T.T.) producer's licence shall be subjected to a tuberculin test carried out by an authorised Veterinary Officer and in such manner as the Ministry may from time to time approve.

20. The holder of a Grade A (T.T.) producer's licence shall maintain a suitable system for the marking for the purposes of identification of the animals of the herd, and shall keep a register in which particulars of the details of identification of the animals are entered as often as may be necessary.

21.—(1) If the herd owned by the holder of a Grade A (T.T.) producer's licence is an attested herd, or if it during the currency of the licence becomes an attested herd, the licensed producer shall comply with the conditions prescribed in any scheme relating to attested herds.

(2) If the herd is not an attested herd no animal shall be added to the herd unless it has passed a tuberculin test within fourteen days before it is so added, or in the case of an animal taken directly from an attested herd, or a herd in respect of which a Grade A (T.T.) licence is in force, on the occasion of the last test in that herd.

(3) Where an animal is certified as reacting to the tuberculin test it shall forthwith be removed from the herd and a record shall be kept as to the manner in which the animal has been disposed of.

(4) The herd shall be completely isolated from all other cattle.

22.—(1) A licensed producer of Grade A (T.T.) milk shall give to an authorised officer any assistance which the authorised officer may reasonably request him to give for the purpose of a tuberculin test or of an examination of animals.

(2) A licensed producer of Grade A (T.T.) milk shall not permit any animals in the herd to be injected with tuberculin except with the permission of the Ministry.

23. Where the vessels and appliances used in the handling of Grade A (T.T.) milk are capable of being enclosed in a steam container they shall, notwithstanding anything to the contrary contained in paragraph 16 of these Regulations, be sterilised by being kept in such a container for at least 15 minutes at a temperature of not less than 210 degrees Fahrenheit otherwise they shall be sterilised by being thoroughly scalded with steam.

24.—(1) Grade A (T.T.) milk or Grade B milk shall not be put into bottles or other retail containers other than on the premises of the licensed producer.

(2) Subject to the provisions of sub-paragraph 6 of this Regulation Grade A (T.T.) milk or Grade B milk intended for sale or distribution shall, after being cooled, be put into bottles which have been washed and sterilised on the premises of the licensed producer or into other retail containers of such type as may, from time to time, be approved by the Ministry.

(3) Every bottle containing " Grade A (T.T.) milk " shall be tightly closed and shall be securely fastened with a metal cap, coloured green, which overlaps the lip of the bottle and every bottle containing " Grade B milk " shall be tightly closed and shall be securely fastened with a metal cap which overlaps the lip of the bottle or with a cardboard disc inset in the neck of the bottle.

(4) The cap shall bear the name and address of the producer and the words " Grade A (T.T.) milk " or " Grade B milk " as the case may be and the day of production. Any printed matter inscribed on a bottle or other retail container containing Grade A (T.T.) milk shall be green in colour and on a bottle containing Grade B milk, brown in colour.

(5) A bottle or other retail container may bear the name or trade name of the licensed producer or, where the milk is sold by the licensed producer to a licensed distributor for resale by him, the name or trade name of such licensed distributor but no other name or trade name.

(6) Where the quantity of milk intended for delivery to any one purchaser exceeds two gallons, a churn of suitable capacity which has been washed and sterilised on the premises of the licensed producer may be used for the purposes of the delivery of the milk. The churn shall be sealed, labelled with the name and address of the producer, the words " Grade A (T.T.) milk " or " Grade B milk " as the case may be (the letter " A " or " B " being at least half an inch high), and the day of production with the words " morning " " evening " or " mixed milk " according to the time of milking or otherwise marked to the same effect.

PART VII

Provisions relating to premises used by a licensed distributor

25. Subject to the exceptions provided herein every licence holder shall provide a dairy for the purposes of his business as a licensed distributor, and the said dairy shall be constructed in conformity with the requirements set out in the Schedule to these Regulations.

Provided that any premises being used by a licensed distributor at the commencement of these Regulations which do not conform with the requirements of these Regulations may, notwithstanding their failure to conform with such requirements, continue to be so used for such period as the Ministry may allow.

26.—(1) A licensed distributor shall not handle milk in or distribute milk from any premises other than the dairy and, save as provided in respect of retail shop premises, the said dairy shall be reserved solely for the purposes of handling milk and the storage of vessels and appliances used in connection with the distribution of milk.

(2) The dairy and the approaches thereto shall be kept in a clean condition and every person engaged in the handling of milk in the dairy shall keep himself and his outer clothing clean.

27.—(1) In addition to the general requirements set out in the Second Schedule the following requirements shall apply in the case of a licensed distributor who carries on the processes of pasteurising and bottling of milk.

(2) The premises used as a dairy shall provide separate accommodation for :—

(*a*) raw milk reception and washing of churns ;
(*b*) milk processing, bottle washing and filling ;
(*c*) storage of packed milk at a temperature not higher than 45 degrees F. ;
(*d*) storage of stocks of material and appliances used in connection with the business of milk production.

(3) The dimensions of the several parts of the dairy accommodation, the relationship of the said parts one to the other and the type and capacity of appliances provided therein shall be such as, regard being had to the quantity of milk handled on the premises, will satisfy the Ministry that the said milk can be handled in accordance with these Regulations.

(4) All fixed appliances shall be so placed in relation to adjacent walls and to each other as will permit of the appliances and surroundings thereof being easily cleansed.

(5) Appliances used in the handling of milk shall be so constructed as to create no dead ends or pockets capable of retaining milk or of washing or cleansing fluid.

(6) The surfaces of appliances with which milk comes into contact shall be of such construction as will permit of their being readily cleansed and the said surfaces shall be of such a character as will not impart any metallic flavour to the milk.

(7) The whole of the apparatus in which milk is pasteurised and bottled shall be so constructed as to secure the protection of the milk from contamination by dust or otherwise, and from the direct rays of the sun.

28. Notwithstanding anything to the contrary contained in these Regulations a licensed distributor may use as a dairy for the purposes of the sale of milk by retail, the premises used by him for the sale by retail of other commodities provided :—

(1) that the premises are adequately lighted and ventilated and maintained in a clean condition ;

(2) that no goods which emit odours or flavours likely to be absorbed by milk are stored in such proximity to the milk that the risk of such absorption exists ;

(3) that the milk is contained in sealed bottles or approved retail containers ;

(4) that the said bottles or retail containers are not opened before sale ; and

(5) that delivery of the milk is taken by the purchaser at the seller's premises.

29. The foregoing conditions relating to the provisions of a dairy by a licensed distributor shall not be obligatory in the case of a licensed distributor who —

(1) purchases all his supplies of milk from a licensed distributor who carries on the processes of pasteurising and bottling of milk and takes delivery of such supplies at the premises of the said distributor on the day on which it is proposed to distribute the milk to the consumer ; and

(2) sells milk by retail only and delivers such milk to the premises of the consumer ; and

(3) does not open any container of milk in the course of such delivery ; and

(4) on completion of such delivery returns all milk crates and all bottles or other containers (whether empty or otherwise) direct to the premises of the distributor from whom the milk was purchased.

PART VIII

Provisions relating to the handling of milk on the premises of a licensed distributor who pasteurises and bottles milk

30.—(1) A licensed distributor shall pasteurise milk in accordance with one or other of the following methods :—

(*a*) milk shall be retained at a temperature of not less than 145°F and not more than 150°F for at least thirty minutes and be cooled immediately to a temperature of not more than 45°F ; or

(*b*) retained at a temperature of not less than 161.5°F for at least fifteen seconds and be cooled immediately to a temperature of not more than 45°F.

(2) The temperature to which the milk is heated or of the medium by which it is heated or maintained at any temperature shall be automatically controlled.

(3) Any apparatus in which milk is to be pasteurised in accordance with sub-paragraph 1 (*b*) of this Regulation shall be provided with a device which shall automatically divert the flow of milk which is not retained at a temperature of 161.5°F.

(4) Such indicating and recording thermometers shall be installed in suitable places in the apparatus in which the milk is pasteurised as will indicate and record the temperature at which the milk is retained and to which it is cooled.

(5) The records of recording thermometers shall be dated and shall be preserved for a period of not less than two months.

(6) A licensed distributor shall not cause any pasteurising plant to be operated for a period of more than six hours without rewashing and resterilising.

(7) Milk shall not be pasteurised or otherwise heated more than once.

31. All appliances and utensils with which milk comes in contact shall after each day's operations be thoroughly cleansed and sterilised by one or other of the following methods :—

(1) exposure to steam in an enclosed container for not less than fifteen minutes at a temperature of not less than 210°F ;

(2) injection of steam into the appliances for fifteen minutes after temperature of condensate issuing at the outlet of the appliances has reached 200°F.

(3) injection of water at a temperature of not less than 180°F for not less than thirty minutes,

(4) such method as may from time to time be approved by the Ministry.

32. Every person engaged in the processes of pasteurising and/or bottling milk shall wear protective clothing.

(1) Pasteurised milk shall not be put into bottles or other retail containers elsewhere than on the premises where it is pasteurised.

(2) Subject to the provisions of sub-paragraph (6) of this Regulation pasteurised milk intended for sale or distribution shall be put by mechanical means into bottles which have been washed and sterilised in accordance with these Regulations at the premises at which the milk is pasteurised or into other retail containers of such type as may from time to time be approved by the Ministry, and as part of a continuous process of pasteurising and filling.

Provided that this paragraph shall not be deemed to prohibit the retention for a limited period of pasteurised milk in a holding vat located between the pasteurising apparatus and bottling apparatus where the said pasteurising apparatus, holding vat and bottling apparatus are linked together by enclosed connecting pipes.

(3) The bottles shall be tightly closed and securely fastened by mechanical means with a metal cap overlapping the lip or, until such date as the Ministry may determine, with a cardboard disc inset in the neck of the bottle.

(4) The cap or disc shall be marked with the name or trade name or the licence number of the holder of the distributor's licence on whose premises the milk was pasteurised, and the word " pasteurised ". The cap or disc shall also be marked with the " day of delivery " being a day of the week not later than that following the day on which the milk was pasteurised. If any colour is used in relation to the disc or cap that colour shall be brown.

(5) The bottle may bear the name or trade name of the licensed distributor on whose premises the milk was pasteurised or where the milk is sold to another licensed distributor for resale by him, the name or trade name of such distributor but no other name or trade name. Any printed matter inscribed on a bottle or other retail container containing pasteurised milk shall be brown in colour.

(6) Where the quantity of milk intended for delivery to any one purchaser exceeds two gallons a churn of suitable capacity which has been washed and sterilised on the premises where the milk is pasteurised may be used for the purpose of the delivery of the milk.

PART IX

Provisions as to water supplies

34.—(1) A licensed producer's or licensed distributor's premises shall be provided with a water supply suitable and sufficient for the purposes of these Regulations.

(2) The water shall be clean and free from pollution, and shall be protected against contamination caused by drainage of foul water or otherwise.

(3) All practicable precautions shall be taken to keep the water used for the cooling of milk at the lowest possible temperature.

PART X

General Provisions relating to the transport of milk

35. Every person engaged in the transporting of milk shall use or cause to be used all practicable precautions for preventing milk from being unnecessarily exposed to the direct rays of the sun and from being contaminated by dirt, dust, rain water or otherwise, and in particular no such person shall leave or cause to be left any bottles or churns containing milk on a public highway, except on final delivery on a retail sale.

36. No person shall remove or tamper with any cap, disc or other closing device on any bottle at any time after it has left the premises where the bottle was filled, and before it is delivered to the consumer.

37. Except in pursuance of any statutory authority in that behalf no person shall, in the course of transporting of milk, open any vessel or other receptacle containing milk or transfer such milk from one receptacle to another. Provided that this Regulation shall not be deemed to prohibit a licensed producer or a licensed distributor or their agents from opening a vessel or other receptacle (not being a bottle) on final delivery on a retail sale, or when taking delivery of milk in bulk from opening the vessel or other receptacle for the purpose of checking the contents thereof or for transferring milk to another receptacle for the purpose of sampling.

38. The interior of every cart, lorry or other vehicle when used for the conveyance of milk shall be kept clean. No live bird or animal or any article likely to contaminate the milk shall be conveyed in such a vehicle at the same time as milk and no such vehicle which has been used for the conveyance of offensive matter shall be used for the transporting of milk until that vehicle has been thoroughly cleansed and purified.

39. Every milk tanker, vessel or other container (other than bottles) in which milk is carried by rail or road shall be provided with a lid without openings which shall be so constructed and fitted as to prevent the access to the milk of dirt, dust or rain water or the return to the interior of the container of any milk which may have been splashed above the lid.

PART XI

Standard of quality of milk

40. Samples of milk if taken, transported, kept and tested in accordance with the procedure set out in the Third Schedule to these Regulations shall comply with the following standards of quality.

(1) Grade A (T.T.) milk

(*a*) The milk shall not contain more than 50,000 bacteria per millilitre, and

(*b*) no coliform bacteria shall be found in one hundredth part of a millilitre.

(2) Grade B milk

(*a*) The milk shall not contain more than 300,000 bacteria per millilitre and

(*b*) no coliform bacteria shall be found in one hundredth part of a millilitre.

(3) Milk sold by the holder of a Milk Licence

The milk, when submitted to a methylene blue reduction test, shall not be decolourised in less than three hours if the sample is taken during the period 1st May to 31st October, or in less than four-and-a-half hours if the sample is taken during the period 1st November to 30th April.

(4) Pasteurised milk

(*a*) No coliform bacteria shall be found in one millilitre, and

(*b*) shall give a reading of not more than 2.3 Lovibond blue units when submitted to a phosphatase test.

PART XII

Records and Returns

41. The holder of a Grade A (T.T.) or of a Grade B producer's licence or of a distributor's licence —

(1) shall keep accurate records of the quantities of milk produced, purchased and sold as the case may be, and of the name and addresses of the persons from whom the milk was purchased and to whom it was sold.

(2) retain such records for a period of twelve months from the date of production or the date of the transaction to which the record relates.

PART XIII

Revocation

42. So much of these Regulations as relates to Grade B milk shall cease to have effect on the 31st day of August, 1952.

Sealed with the Official Seal of the Ministry of Agriculture of Northern Ireland this fifth day of October, nineteen hundred and fifty one.

(L.S.)

J. McAllan,
Assistant Secretary.

FIRST SCHEDULE

FORM 1

MINISTRY OF AGRICULTURE FOR NORTHERN IRELAND

MILK ACT (NORTHERN IRELAND) 1950

Application for a *..... Licence

1. I/We .....
hereby apply for a * Licence for the production and sale of milk, subject to the conditions of the above-mentioned Act and of any regulations issued thereunder.

2. The premises that will be used by me/us in connection with the production and sale of milk, to which this application relates, are situated in the Townland of .....in the Rural District of ..... and in the County of .....

3. I/We hereby declare that at this date I/we own.....cows.

Signature(s) of Applicant(s).....

Full Postal Address .....

.....

Date.....

To : The SECRETARY,
Ministry of Agriculture,
Castle Hill Road,
Belfast.

* Insert either " Grade A (T.T.) " " Grade B " or " Milk ".

FORM 2

MINISTRY OF AGRICULTURE FOR NORTHERN IRELAND

MILK ACT (NORTHERN IRELAND) 1950

Application for a Distributor's Licence

I/We .....
hereby apply for a licence for the purchase and resale of milk subject to the provisions of the above-mentioned Act and any regulations made thereunder. The premises that will be used by me/us in connection with the purchase and re-sale of the milk to which this application relates are situated at .....

.....

Signature(s) of Applicant(s).....Date.....

Full Postal Address.....

To : The SECRETARY,
Ministry of Agriculture,
Castle Hill Road,
Belfast.

FORM 3

MINISTRY OF AGRICULTURE FOR NORTHERN IRELAND

MILK ACT (NORTHERN IRELAND) 1950

Grade A (T.T.) Licence

The Ministry of Agriculture for Northern Ireland hereby licenses the person(s) or firm named overleaf to produce and sell milk whether by wholesale or by retail under a Grade A (T.T.) Licence. The authority to produce and sell milk hereby granted is valid only in respect of the premises situated at.....

.....

This licence is not transferable, and is subject to the conditions prescribed in any Regulations issued under the above Act, and unless previously revoked or suspended by the Ministry or surrendered by the licence holder, shall remain in force until the day of 19 .

Dated..... D. A. E. HARKNESS, Secretary.

FORM 4

MINISTRY OF AGRICULTURE FOR NORTHERN IRELAND

MILK ACT (NORTHERN IRELAND) 1950

Grade B Licence

The Ministry of Agriculture for Northern Ireland hereby licenses the person(s) or firm named overleaf to produce and sell milk whether by wholesale or by retail under a Grade B licence. The authority to produce and sell milk hereby granted is valid only in respect of the premises situated at.....

.....

This licence is not transferable, and is subject to the conditions prescribed in any Regulations issued under the above Act, and unless previously revoked or suspended by the Ministry or surrendered by the licence holder, shall remain in force until the 31st day of August, 1952.

Dated..... D. A. E. HARKNESS, Secretary.

FORM 5

MINISTRY OF AGRICULTURE FOR NORTHERN IRELAND

MILK ACT (NORTHERN IRELAND) 1950

Milk Licence

The Ministry of Agriculture for Northern Ireland hereby licenses the person(s) or firm named overleaf to produce and sell milk by wholesale under a Milk Licence. The authority to produce and sell milk hereby granted is valid only in respect of the premises situated at .....

.....

This licence is not transferable, and is subject to the conditions prescribed in any Regulations issued under the above Act, and unless previously revoked or suspended by the Ministry or surrendered by the licence holder, shall remain in force until the day of 19 .

Dated..... D. A. E. HARKNESS, Secretary.

FORM 6

MINISTRY OF AGRICULTURE FOR NORTHERN IRELAND

MILK ACT (NORTHERN IRELAND) 1950

Distributor's Licence

The Ministry of Agriculture for Northern Ireland hereby licenses the person(s) or firm named overleaf to purchase and sell milk, the only premises to be used in connection with the purchase and re-sale of the said milk being situated at .....

This licence is not transferable and is subject to the conditions prescribed in any Regulations issued under the above Act, and unless previously revoked or suspended, shall remain in force until the day of 19 .

Dated..... D. A. E. HARKNESS, Secretary.

SECOND SCHEDULE

Provisions relating to the construction of cowsheds and dairies

I. COWSHEDS

1. The cowshed shall be so situated as to involve no risk of contamination of the milk.

2. The cowshed shall be constructed of durable and weatherproof material and having such other characteristics as will having regard to the arrangements for ventilation permit of an equable temperature being maintained within the building and not cause undue condensation on the internal walls and ceiling.

3. The cowshed shall be provided with arrangements for ventilation suitably placed and so used as will secure a continuous and gradual change of air and the maintenance of an equable temperature within the building. The internal dimensions of the cowshed shall be such as, having regard to the arrangements for ventilation are necessary for the maintenance of the health of the animals.

4. The cowshed shall be provided with such windows and such means of artificial lighting as will enable the process of milking or any other process connected with the production of milk or with the care of the animals to be conducted in good light.

5. The floor of the cowshed shall be made of a durable impervious and non-slippery material which can be easily cleaned. The interior of the cowshed or cowsheds shall be arranged so as to provide —

(*a*) standings for all the animals in the dairy herd

(*b*) a manure channel or channels and

(*c*) a floor space behind the cows, (in this Schedule described as the "milking passage").

Provided that where the building is provided solely for the milking of the animals the number of standings provided may be such number only as may be required for such milking and the milking passage may be either behind or alongside the standings.

6. Standings may be either single standings or double standings, and the floor area devoted to each such standing shall be such as will provide adequately for the comfort, security and cleanliness of the animals and permit free movement by any person engaged in milking or other duties without danger of himself or his clothing or any milk carried by him being contaminated.

7. The divisions between the standings shall be made of concrete or of other smooth and impervious material.

8. A manure channel shall be provided at the back of the standings and so situated that all the droppings from the animals when secured in their normal positions in the standings will fall into such channel. The floor of the cowshed shall be sloped over the 30 inches on either side of the manure channel so as to ensure that all liquid matter falling thereon will flow into the manure channel. The channel shall be of such width and depth and so sloped as to ensure that all liquid matter is allowed free drainage to a place outside the cowshed for disposal in accordance with these Regulations.

9. The milking passage shall be of such width that any person or persons engaged in any of the duties relating to milk production can pass freely to and fro without danger of themselves or their clothing or any milk carried by them being contaminated.

10. The walls of the cowshed shall be finished on the inside to a height of four feet in smooth concrete or other impervious and durable material capable of being easily cleaned. The remainder of the walls and the ceiling shall be composed of or lined with material from which dust or dirt can be easily removed.

11. The arrangements for the disposal outside the cowshed of manure or other matter shall be such that the surroundings of the cowshed and dairy can be easily kept clean and that no offensive odour can reach the cowshed or dairy.

II. DAIRY

1. A dairy shall be so situated as to involve no risk of contamination of the milk from external sources. In particular the dairy shall not form any part of a building which communicates by door, window or otherwise with —

(*a*) any sanitary convenience, cesspool, receptacle for ashes or other refuse, or a boiler-house or fuel store, or a store used for the deposit of any commodity which gives off any fumes or any strong odour likely to be absorbed by the milk,

(*b*) any room which is used as a kitchen, a living room or as a sleeping room or any room which is occupied by a person suffering from an infectious or contagious disease,

(*c*) any room, shed or building in which animals, other than those comprising the dairy herd, or poultry are kept.

2. A dairy shall be constructed in such manner as will provide that —

(*a*) the floor thereof shall have a smooth and impervious surface so that it is practicable to remove any liquid matter which may fall thereon, and shall be so sloped as to convey such liquid matter to a suitably placed outfall. Drains and gully traps shall be so constructed and maintained as to provide an unobstructed flow of effluent from the dairy floor, and the said gully traps shall be located outside the dairy and shall be well ventilated,

(*b*) the walls, or any part of the walls liable to splashing of milk shall be smooth and impervious so that it is practicable to remove any matter which may be deposited thereon,

(*c*) the ceiling shall be smooth and impervious so that it is practicable to remove dirt and dust easily from it.

3. A dairy shall be provided with arrangements for ventilation suitably placed, and so used as to secure that the air therein is kept in a fresh and wholesome condition.

4. A dairy shall be provided with such windows and other means of lighting as will enable any process connected with milk to be carried on in good and proper light.

5. The approaches to the dairy shall be made of such impervious material as will allow of proper cleaning.

6. There shall be provided for the use of persons engaged in the handling of milk, facilities to wash and cleanse themselves.

7. No cistern for the supply of water to the dairy shall be in direct communication with, or discharge directly into, a sanitary convenience.

THIRD SCHEDULE

TESTS FOR GRADED MILK

Provisions as to samples, treatment and testing of samples of milk

TAKING OF SAMPLES

1.—(1) Milk produced by a licensed producer who is the holder of a Grade A (T.T.) or a Grade B licence.

Samples may be taken at any time when the milk is in possession of the licensed producer or at any subsequent time before delivery to the consumer.

(2) Milk produced by a licensed producer who is the holder of a Milk Licence. Samples shall be taken at any time when the milk is

(*a*) in the possession of the licensed producer
(*b*) in the course of transport to any licensed distributor who has purchased the milk for pasteurisation, or
(*c*) in the possession of such licensed distributor provided that the churn in which the milk is contained has not been opened otherwise than as provided in paragraph 37 of these Regulations.

(3) Pasteurised Milk.

Samples may be taken at any time after pasteurisation and before delivery to the consumer.

2. When the milk is in containers not exceeding one quart in capacity, the sample shall consist of one such container which shall be delivered intact to the testing laboratory.

3. When the milk is in containers exceeding one quart in capacity, it shall be thoroughly stirred before sampling with a sterile instrument. The sample shall be drawn with a sterile dipper and poured into a sterile bottle, which shall thereupon be immediately stoppered.

TRANSPORT OF SAMPLES

4.—(*a*) Samples shall be transported to the testing laboratory with the least possible delay. During the period 1st April to 31st October, unless the sample is to be delivered to the testing laboratory within two hours of the time of sampling, the sample shall be placed in an insulated box containing a suitable refrigerant for transport to the laboratory. During the period 1st November to 31st March, the use of a refrigerant shall not be obligatory provided the samples after taking are delivered to the laboratory within a period not exceeding 8 hours.

(*b*) On arrival at the laboratory, any bottle containing a sample of milk as aforesaid shall be removed from the carrying box, and if the test is not then immediately begun the milk shall be maintained at a temperature below 40°F. pending testing.

IDENTIFICATION OF SAMPLES

5. For the purposes of the identification of the sample in the laboratory the person taking the sample shall mark it with a number or other suitable identification mark and shall, at the time of sampling, enter in a book or on a paper, which shall accompany the sample particulars to the following effect :—

(*a*) the identification number or mark ;
(*b*) the name and address of the licence holder by whom the milk was consigned, or by whom it was being delivered, or on whose premises the sample was taken.

(*c*) in the case of raw milk, so far as the information may be available, the date of milking and whether milk of the morning or evening milking or mixed milk, or otherwise the date and time of sampling ;
(*d*) in the case of pasteurised milk, the day of pasteurisation.

6. For the purpose of the tests prescribed in this Schedule all glassware, stoppers, water diluents and media shall be sterile, and all water shall be glass-distilled.

THE METHYLENE BLUE TEST

Reagent

7. The type of Methylene Blue tablets used for the test shall be such type as approved by the Ministry. A solution shall be prepared by adding one tablet to 200 ml. of cold water in a flask, and by shaking until the tablet is completely dissolved and making up the solution to 800 ml. with cold water. The resultant solution shall be stored in a stoppered flask in a cool, dark place, and shall not be used if :—
(*a*) it has been exposed to sunlight ; or
(*b*) a period of two months has elapsed since the date of preparation.

8. The amount of methylene blue required for a day's work shall be poured off from the stock bottle into a suitable glass container. The pipette used for transferring the methylene blue solution to the tubes of milk shall not be introduced into the stock bottle.

Apparatus

9.—(*a*) Test tubes shall conform to the British Standard Specification No. 625 152-16 nominal 6 inches by $\frac{5}{8}$ inch having an internal diameter of 13.5 $\pm$ 0.5 mm., and being accurately marked at 10 ml. They shall be plugged with cotton wool, or covered with closely fitting aluminium caps, or stoppered in such other way as shall prevent contamination.

(*b*) Pipettes shall be 1.0 ml. straight-sided blow out delivery pipettes and shall be plugged with cotton wool at the upper end.

Method of Carrying out Test

10. The test shall be carried out in the following manner :—

(1) The sample of milk shall be thoroughly mixed by inverting and shaking, and the milk shall then be poured into a test tube up to the 10 ml. mark, leaving one side of the interior unwetted with milk. One ml. of methylene blue solution shall be added without letting the pipette come into contact with the milk in the tube or with the wetted side of the interior of the tube. After a lapse of 3 seconds the solution remaining in the tip of the pipette shall be blown out. The tube shall be closed with a rubber stopper using aseptic precautions. The tube shall then be slowly inverted twice so that the whole column of contained air rises above the level of the milk, and placed within 5 minutes in a water bath. The water in the bath shall be kept above the level of the milk in the test tubes, and its temperature, which shall be between 37°C. and 38°C., shall be maintained as uniform as possible by means of a reliable automatic thermo-regulator. The interior of the bath shall be kept completely dark.

(2) To indicate when decolourisation is commencing, and when it is complete, two control tubes shall be used for comparison with each batch of tubes containing the milk under test. One control tube shall be prepared by immersing in boiling water for not less than three minutes a properly plugged test tube containing 1 ml. of tap water and 10 ml. of milk, and a second control tube shall be prepared by immersing in boiling water for not less than three minutes a properly plugged test tube containing 1 ml. of methylene blue solution and 10 ml. of milk.

(3) The tubes containing the milk under test and the control tubes shall be inspected at half-hourly intervals. At these inspections :—
(*a*) any tube in which the milk has become decolourised shall be removed from the water bath ;
(*b*) any tube in which decolourisation has begun shall remain without inversion in the water bath until decolourisation is complete ; and
(*c*) all other tubes in the water bath shall be inverted once and replaced.

11. The time, within the limits of 3 hours or 4½ hours, as the case may be, at which decolourisation is observed, shall be recorded.

12. The milk shall be regarded as decolourised when the whole column of milk is completely decolourised or is decolourised up to within 5 mm. of the surface. A trace of colour at the bottom of the tube may be ignored provided that it does not extend upwards for more than 5 mm.

Interpretation

13. A sample shall be regarded as satisfying the methylene blue test if decolourisation as described in paragraph 12 hereof does not take place in 3 hours, between 1st May and 31st October, or 4½ hours, between 1st November and 30th April.

THE COLIFORM TEST

Apparatus

14.—(1) Culture medium tubes. Test tubes for holding medium shall conform to the British Standard Specification No. 625 152-16 nominal 6 inches x ⅝ inch. Each tube shall contain an inverted Durham tube conforming to nominal 1⅜ inch x 5/16 inch.

(2) Dilution tubes or flasks shall be suitably stoppered.

(3) Pipettes shall be 1.0 ml. straight-sided blow out delivery pipettes plugged with cotton wool at the upper end.

Medium

15. MacConkey broth made according to the following formula shall be used :—

MACCONKEY BROTH (SINGLE STRENGTH)	
Commercial Sodium taurocholate	5 gms.
Lactose	10 ,,
Peptone	20 ,,
Sodium Chloride	5 ,,
Distilled Water	1,000 ml.

Add 2 ml. bromo-cresol purple (1.6% alcoholic solution).
Final pH 7.0 — 7.2.

Diluent

16. Diluent shall be either 0.9% sodium chloride solution or one quarter strength Ringer's Solution.

RINGER'S SOLUTION (FULL STRENGTH)	
Sodium chloride	9.0 gms.
Potassium chloride	0.42 ,,
Calcium chloride	0.48 ,,
Sodium bicarbonate	0.2 ,,
Distilled water	1,000 ml.

Method of carrying out test

17. The test shall be carried out in the following manner :—

Using aseptic precautions, 9 ml. of diluent shall be measured by means of a 9 ml. pipette or other automatic device into each dilution tube or flask.

Making the dilution

18. After the sample has been thoroughly mixed dilutions shall be made in dilution tubes or flasks containing the diluent in the following manner :—

A 1 ml. pipette shall be introduced into the sample bottle of milk with its tip reaching not more than ½ to 1 inch below the surface of the milk. The milk shall be sucked into the pipette and 1 ml. of milk measured out holding the pipette in a vertical position. The pipette shall be withdrawn, the tip being touched against the neck of the bottle to remove excess milk adhering to the outside ; it shall then be introduced into the first test tube of the diluting series with the tip touching the side of the tube at a point about ½ to 1 inch above the level of the diluent without the pipette coming into contact with the diluting fluid. The milk shall then be blown out, 3 seconds shall be allowed to elapse for drainage and the remaining contents blown out. If the dilution is being made in tubes or flasks stoppered with cotton wool plugs, a fresh pipette shall be introduced into the 1 in 10 dilution with its tip reaching not more than a ½ to 1 inch below the surface of the diluent, the fluid shall be sucked up and down 10 times to the 1 ml. mark, one ml. measured out with the pipette in the vertical position, the pipette removed from the fluid, its tip being touched against the side of the test tube or flask about a ½ inch below the rim so as to remove any excess adhering to the outside, the pipette transferred to the second tube or flask of the diluting series, introduced with

its tip touching the tube or flask about ½ to 1 inch above the level of the diluent, and the contents expelled in the manner described above. If the dilution is being made in tubes or flasks with solid stoppers or tightly fitting covers a similar procedure to above shall be adopted, but instead of sucking up and down the fluid ten times the contents may be mixed by inverting and shaking.

Inoculation and Incubation of the culture tubes containing MacConkey Broth

19. A fresh 1 ml. pipette shall be introduced ½ to 1 inch below the level of fluid in the 1-100 solution of milk, and after mixing 1 ml. portions shall be transferred to each of 3 culture tubes containing MacConkey Broth using the same technique as described under " Making the dilution " (Paragraph 18).

In the case of pasteurised milk using a fresh sterile pipette, 1 ml. portions of milk from the mixed sample shall be transferred into each of 3 culture tubes containing MacConkey Broth, the same technique described for making the first dilutions (paragraph 18) shall be used. The culture tubes shall be incubated at 37°C. ± 1°C. for 2 days and examined for acid and gas production.

Standards

20. The milk shall be regarded as satisfactory in respect of this test if 2 out of 3 tubes are found to be free from acid and gas after 48 hours.

THE BACTERIAL COLONY COUNT

Apparatus

21.—(1) Dilution tubes as for the coliform test (paragraph 14).
(2) Pipettes 1 ml. pipettes as for coliform test (paragraph 14).
(3) Petri dishes B.S.S. No. 611, 1935.

Culture Medium

22.

Yeastrel	3 gms.
Peptone	5 ,,
Washed Shredded agar	18 ,,
Fresh Skim Milk	10 ml.
Distilled water	1,000 ,,

The final pH 7.0 — 7.2.

Diluent

23. As for coliform test (paragraph 16).

Method of carrying out Test

The test shall be carried out in the following manner :—

Dilutions

24.—(1) Dilutions of 1/10, 1/100 and 1/1000 of the milk sample which has previously been thoroughly mixed shall be made in the manner and with the diluent described for the Coliform Test (paragraph 16), except that an additional dilution, the 1/1000 dilution shall be made from the 1/100 dilution.

(2) At the time of making the 1/100 dilution and with the pipette which has been used for mixing the contents of the dilution tube, 1 ml. shall be measured out with this pipette in the vertical position, and the tip touched against the side of the tube so as to remove any excess adhering to the outside. The contents of the pipette shall be blown out gently into the centre of a Petri dish, the tip of the pipette being held about ½ inch above the level of the glass, 3 seconds allowed to elapse, the tip of the pipette touched against the dish at a point some distance from the fluid already delivered, and the last drop blown out. This pipette shall be used for making the 1/1000 dilution. A fresh pipette shall be taken and the contents of the dilution tubes mixed and the Petri dish inoculated in a similar manner as described for the previous dilution.

25.—(1) The bottles or tubes of the sterile standard milk agar shall be melted and cooled down to 45°C. About 10-12 ml. of this agar shall be delivered under aseptic conditions into each Petri dish. After the medium is delivered, mixing of the contents shall commence immediately. This shall consist of a series of circular movements in a clockwise and an anti-clockwise direction. The shaking and circular movements shall last from 5 to 10 seconds, the plate being kept flat on the bench throughout the whole process.

(2) The time elapsing between the preparation of the dilutions and the pouring of the plates shall not exceed 15 minutes.

(3) The plates shall be incubated bottom upwards at 37°C. ±.1°C. for two days.

Method of Counting

26. The plates shall be counted within 4 hours of removal from the incubator. A specially constructed box allowing the examination of the plates by combined reflected and transmitted artificial light against a dark background with a hand magnifying glass of 4 inches focal length magnifying 2½ diameters shall be used for counting.

THE PHOSPHATASE TEST

27. The Phosphatase test shall be carried out in accordance with Test A or Test B as prescribed herein.

28. All samples shall be raised to room temperature immediately before being tested.

Precautions

29. The following precautions shall be taken :—

(*a*) Samples which show a taint or clot on boiling shall not be tested.
(*b*) Phenols, disinfectants and detergents containing phenols and soap containing carbolic acid shall be kept apart from the test reagents and apparatus.
(*c*) Bottle caps made from phenolic resins shall not be used.
(*d*) Rubber stoppers shall not be used until they have been shown by test not to contain phenolic impurities.
(*e*) A fresh pipette shall be used for each sample of milk. Pipettes shall not be contaminated with saliva.
(*f*) All reagents shall be kept in a cool dark place and shall be well protected from dust.
(*g*) Tests shall not be carried out in direct sunlight.
(*h*) Freshly boiled distilled water shall be used throughout.

Apparatus

30. The following apparatus shall be used :—

(*a*) A water bath or incubator capable of being maintained at 37 ± 1°C.
(*b*) A pipette or an automatic burette to deliver 4.5 ml. The latter shall be made from dark glass or be painted a dark colour.
(*c*) A supply of 1.0 ml. straight sided pipettes of an accuracy equal to that of N.P.L. grade B marked at 0.5 and 1.0 ml. plugged with cotton wool.
(*d*) A supply of test tubes conforming to British Standard Specification No. 625 152/16, accurately marked at 10 ml., with rubber stoppers to fit.
(*e*) A supply of filter funnels, 5 cm. diameter.
(*f*) A supply of Whatman filter papers, 9 cm. No. 40.
(*g*) Either a Lovibond " all purposes " comparator with cell of 25 mm. depth and disc containing standard coloured glasses corresponding to 0.5, 1.5, 2.3 and 6.0 Lovibond blue units ; or a Lovibond tintometer with 13 mm. cell.

Care of Apparatus

31. New glassware shall be cleaned in chromic acid prepared in the following manner.

90 g. of powdered potassium bichromate shall be dissolved in 200 ml. of hot water contained in a four litre conical flask. After being cooled, two litres of commercial sulphuric acid (not less than 90 per cent.) shall be added. The mixture shall be stirred until the precipitate has dissolved. The solution shall be kept covered and shall be discarded when it becomes green in colour. After cleaning in chromic acid, new glassware shall be well rinsed in hot water and dried by evaporation.

32. After use each piece of glassware shall be well washed in hot water containing soda, rinsed in hot clean water and then soaked for 24 hours in chromic acid prepared as in (paragraph 31). The glassware shall then be thoroughly rinsed in water and then with distilled water and dried by evaporation.

33. Glassware used for the test shall not be used for any other purpose, and shall be kept apart from all other apparatus in the laboratory.

Reagents

34.—(1) Reagents of the highest analytical quality shall be used.

(2) Buffer substrate—Solutions shall be prepared either

(*a*) by dissolving 1.09 g. of disodium phenyl phosphate and 11.54 g. of sodium veronal (sodium diethyl barbiturate) in distilled water saturated with chloroform, and by making up to one litre ; or

(*b*) by adding one buffer substrate tablet to about 45 ml. of boiling distilled water, boiling for exactly one minute, cooling rapidly, making up to 50 ml. with boiled distilled water and adding a few drops of chloroform.

The buffer substrate solution shall be kept in a refrigerator and shall not be used after three days from the date of preparation.

(3) Folin and Ciocalteu's Phenol reagent (stock)—The reagent to be used shall be manufactured under arrangements made by the Ministry or shall be prepared in the following manner :—

100 g. of sodium tungstate Na_2WO_4. $2H_2O$ and 25 g. of sodium molybdate, Na_2MoO_4. $2H_2O$, shall be dissolved in 700 ml. of distilled water in a 1500 ml. flask which shall be connected to a reflux condenser by a ground glass joint, or, by a rubber stopper or cork wrapped in the tin foil provided that the solution shall not come into contact with the tin foil. 50 ml. of syrupy (85%) of phosphoric acid and 100 ml. of concentrated hydrochloric acid shall be added. The mixture shall be refluxed gently for 10 hours and cooled, 150 g. of pure lithium sulphate, 50 ml. of distilled water and from 4-6 drops of liquid bromine shall be added and left for two hours. The excess bromine shall be removed by boiling the mixture under the hood without the condenser for 15 minutes, it shall then be diluted to 1 litre with distilled water and filtered. If the finished reagent has a greenish tint, it shall be rejected ; if it has a golden yellow colour with no greenish tint it shall be considered fit for use. The reagent shall be stored in a refrigerator and be protected from contact with dust, metal or any reducing substance. After four months from the date of preparation any remaining reagent shall be discarded and a fresh stock reagent prepared.

(4) Sodium Carbonate—A 14% solution (weight per volume) shall be made up of anhydrous sodium carbonate.

(5) Sodium Hexa meta phosphate for Test A—The salt shall be used in the form of flakes. It shall be kept in a tightly stoppered bottle. If any white powder has formed during storage, the salt shall not be used until that powder has been removed by sifting. A 5% solution (weight per volume) shall be prepared by dissolving in warm water and making up to volume after cooling.

(6) Reagent for Test A—The test reagent shall be prepared by adding one volume of the stock solution of Folin and Ciocalteu's reagent to one volume of the hexa meta phosphate solution. If any precipitate appears in it, or in any case after four months from the date of preparation, any remaining test reagent shall be discarded and a fresh test reagent prepared.

(7) Reagent for Test B — The test reagent shall be prepared by adding one volume of the stock solution of Folin and Ciocalteu's reagent to two volumes of cold freshly boiled distilled water. This solution shall be made up daily for each series of tests.

Method of carrying out Test A

35. The test shall be carried out in the following manner :—

To 10 ml. of the buffer substrate solution contained in a test tube there shall be added 0.5 ml. of well mixed milk and 3 drops of chloroform. The tube shall be stoppered, the contents mixed and incubated at 37 $\pm$ 1°C. for 24 $\pm$ 2 hours. The tube shall then be cooled, 4.5 ml. of the test reagent A added, the contents allowed to stand for 3 minutes and filtered into a test tube marked at 10 ml. If an automatic burette is used to deliver the test reagent and has stood full of the reagent for more than 24 hours, the first two emptyings of the burette shall be discarded. To 10 ml. of the filtrate there shall be added 2 ml. sodium carbonate solution, the contents mixed and placed for 2 minutes in boiling water which shall be kept boiling. Where a number of tubes are being examined the period of 2 minutes shall be timed from the moment when the water has recommenced boiling. The contents of the test tube shall be cooled and the colour which has developed shall be determined using either a comparator or a tintometer.

Control Tests

36.—(1) All milk samples shall be kept in a refrigerator for 24 hours after the test tubes have been put into an incubator. When the test has been completed, control tests shall be carried out on all samples which have given positive phospatase reaction, in the following manner :—

To a mixture of 10 ml. of the buffer substrate solution and 4.5 ml. of the test reagent A there shall be added 0.5 ml. of milk. These shall be mixed, allowed to stand for 3 minutes and filtered into a test tube marked at 10 ml. To 10 ml. of the filtrate there shall be added 2 ml. sodium carbonate solution, the contents mixed and placed for 2 minutes in boiling water which shall be kept boiling. Where a number of tubes are being examined, the period of 2 minutes shall be timed from the moment when the water has recommenced boiling. The contents of the test tube shall be cooled and the colour which has developed shall be determined using either a comparator or a tintometer.

(2) If the colour reading exceeds 1.5 Lovibond blue units, the test shall be void.

(3) The colour reading obtained from the control test shall not be substracted from the reading obtained from the incubated sample.

37. The purity of the reagents shall be tested by incubating with each batch of samples a tube containing buffer substrate and chloroform but no milk, the procedure after incubation being as prescribed in paragraph 36. If the colour reading thus obtained exceeds 0.5 Lovibond blue units, the test for the particular batch of samples concerned shall be void.

Interpretation

38. The test shall be deemed to be satisfied by milk which gives a reading of 2.3 Lovibond blue units or less.

Method of carrying out Test B

39. The test shall be carried out in the following manner :—

To 10 ml. of the buffer substrate solution contained in a test tube, there shal. be added 0.5 ml. of well mixed milk and 3 drops of chloroform. The tube shall be stoppered, the contents mixed and incubated at 37 $\pm$ 1°C. for 24 $\pm$ 2 hours. The tube shall then be cooled, 4.5 ml. of the test reagent B. added, the contents allowed to stand for 3 minutes and filtered into a test tube marked at 10 ml. If an automatic burette is used to deliver the test reagent and has stood full of the reagent for more than 24 hours the first two emptyings of the burette shall be discarded. To 10 ml. of the filtrate there shall be added 2 ml. sodium carbonate solution, the contents mixed and placed for 5 minutes in boiling water which shall be kept boiling. Where a number of tubes are being examined, the period of 5 minutes shall be timed from the moment when the water has recommenced boiling. The contents of the test tube shall be cooled, filtered to the 10 ml. mark and the colour which has developed shall be determined using either a comparator or a tintometer.

Control Tests

40.—(1) All milk samples shall be kept in a refrigerator for 24 hours after the test tubes have been put into an incubator. When the test has been completed, control tests shall be carried out on all samples which have given positive phosphatase reaction, in the following manner :—

To a mixture of 10 ml. of the buffer substrate solution and 4.5 ml. of the test reagent B, there shall be added 0.5 ml. of milk. These shall be mixed, allowed to stand for 3 minutes and filtered into a test tube marked at 10ml. To 10 ml. of the filtrate there shall be added 2 ml. of sodium carbonate solution, the contents mixed and placed for 5 minutes in boiling water which shall be kept boiling. Where a number of tubes are being examined the period of 5 minutes shall be timed from the moment when the water has recommenced boiling. The contents of the test tube shall be cooled filtered to the 10 ml. mark and the colour which has developed shall be determined, using either a comparator or a tintometer.

(2) If the colour reading exceeds 1.5 Lovibond blue units, the test shall be void.

(3) The colour reading obtained from the control test shall not be substracted from the reading obtained from the incubated sample.

41. The purity of the reagents shall be tested by incubating with each batch of samples a tube containing buffer substrate and chloroform but no milk. Proceed after incubation exactly as directed above in paragraph 39. If the colour reading thus obtained exceeds 0.5 Lovibond blue units, the test for the particular batch of samples concerned shall be void.

Interpretation

42. The test shall be deemed to be satisfied by milk which gives a reading of 2.3 Lovibond blue units or less.