

10. Anhang

10.1. Fragebogen für Marktverkäuferinnen

Questionnaire- milk vendors

Village: _____ Division: _____ Date: _____
 Name of vendor: Mr Mrs
 Address: _____

1 Origin of milk

1.1 Is the supplier collector herdsman herd owner?

1.2 Are there different suppliers? yes no

1.3 What is/are the name(s) of the supplier(s)?

1.

2.

1.4 Address of supplier(s):

1.

2.

1.5 Do you pool the milk? yes no

2 Marketing

2.1 What kinds of products do you sell?

raw milk sour milk raw and sour milk other (please specify)

2.2 Do you process the milk before selling? yes no

2.3 Where do you sell your products?

2.4 How much milk do you purchase every day? (amount in litres)

2.5 How much milk do you sell per day? (amount in litres)

2.6 What is your measuring unit?

- 50 ml 200 ml 500 ml other (please specify)

2.7 *What is the price per unit?*

2.8 *At what time do you usually start to sell milk?*

2.9 *At what time do you usually sell the last milk?*

2.10 *Who assists you when marketing the milk?*

- family neighbour other (please specify)

3 Transport and storage

3.1 *What do you use for the milk transport?*

- plastik bucket (please specify) metal bucket glassware other

3.2 *What capacity has the transport container (in litres)?*

- 5 10 20 other (please specify)

3.3 *How do you store the milk?*

3.4 *How many days do you need to sell the whole milk?*

- 1 2 >2

3.5 *How many days can you keep the milk before it gets spoiled?*

- 1 2 >2

3.6 *How do you know that the milk is spoiled?* (Tick the most important)

- bad smell colour tastes sour other (please specify)

3.7 *How far is the market from your home?*

- on spot sale < 2km 2-5 km 5-10 km > 10 km

3.8 *How long does it take you to get to the market?*

- < 1 hour 1-2 hours 2-3 hours 4-5 hours > 5 hours

3.9 *How do you clean the containers after use?*

- only water soap others

10.2. Fragebogen für Zwischenhändler

Questionnaire- collectors

Village: _____ Division: _____ Date: _____
 Name of collector: Mr Mrs
 Address: _____

1 Origin of milk

1.1 *Is the supplier* herdsman owner?

1.2 *Are there different suppliers?* yes no

1.3 *What is/are the name(s) of the supplier(s)?*

1.

2.

3.

1.4 *Address of supplier(s):*

1.

2.

3.

1.5 *Do you pool the milk?* yes no

2 Marketing

2.1 *What kinds of products do you sell?*

raw milk sour milk raw and sour milk other (please specify)

2.2 *Do you process the milk before selling?* yes no

2.3 *Where do you sell your products?*

2.4 *How much milk do you purchase every day?* (amount in litres)

2.5 *How much milk do you sell per day?* (amount in litres)

2.6 *What is your measuring unit?*

- 5 litres 10 litres others

2.7 *What is the price per unit?*

2.8 *At what time do you usually start to sell milk?*

2.9 *At what time do you usually sell the last milk?*

2.10 *Who assists you when marketing the milk?*

- family neighbour other (please specify)

3 Transport and storage

3.1 *What do you use for the milk transport?*

- plastik bucket metal bucket glassware other (please specify)

3.2 *What capacity has the transport container (in litres)?*

- 5 10 20 other (please specify)

3.3 *How do you store the milk?*

3.4 *How many days do you need to sell the whole milk?*

- 1 2 >2

3.5 *How many days can you keep the milk before it gets spoiled?*

- 1 2 >2

3.6 *How do you know that the milk is spoiled?* (Tick the most important)

- bad smell colour tastes sour other (please specify)

3.7 *How far is the market from your home?*

- on spot sale < 2km 2-5 km 5-10 km > 10 km

3.8 *How long does it take you to get to the market?*

- < 1 hour 1-2 hours 2-3 hours 4-5 hours > 5 hours

3.9 *How do you clean the containers after use?*

- only water soap others

10.3. Fragebogen für Milchproduzenten

Questionnaire-farmers

Village: Division: Visit No.:
 Farmer ID: Date:
 Name of herd owner: Profession:
 Name of herdsman: Relationship to owner: family
 contracted
 other

1 Herdsize and -structure*1.1 What breed do you have?*

- N'Dama
 N'Dama cross
 Zebu
 Zebu cross
 Exotic breed please specify breed:

1.2 How many cattle are presently at herd?

Males: Cows: Suckling calves: Heifers: Total:

1.2.1 *Is there is a bull in the herd?* yes no

1.2.2 *Is it used for breeding?* yes no

1.3 The cows have had how many calves in the past?

One calf two calves three calve four calves
 five and more

No. of cows

1.4 Where did the cattle come from?

- Born in the herd Entrusted to herd owner
 Bought from another herd in the same village Received as gift
 Bought from another village Received as dowry
 others (please specify)

1.6. Do you keep any other livestock? yes no

1.6.1 If yes which species and how many?

goats horses poultry
 sheep donkeys others

1.7 Did you lose cattle in the last months? yes no

1.7.1 If yes, how many?

bulls: cows: heifers: calves:

1.8 Reasons (sale, slaughter, disappearance, diseases, predators etc.)

sale slaughter disappearance
 disease predators others (please specify)

2 Farm management

2.1 Do you supplement the animal feed? yes no

2.1.1 If yes, please name the fodder and the average amount per animal:

kg of daily once a week once a month

2.2 Do you practice artificial insemination? yes no

3 Health maintenance

3.1 Who assists you when the animals are sick?

family neighbour veterinary assistant other (please specify):

3.2 What clinical signs do you observe in your cattle?

Dasso
 Nasal or mouth discharge
 Sneezing/ coughing
 Diarrhea (colour)
 Worms
 Weakness
 Ectoparasites
 Swollen udder
 Abortion
 others (please specify):

3.3 What kind of treatments did you practice?

3.4 Do you regularly vaccinate your cattle? yes no

3.4.1 If yes, when and against which disease?

4 Milk management

4.1 How often do you milk the animals?

morning evening morning and evening

4.2 Where do you milk the animals? _____

Same place every day? yes no

4.3 Do you clean the udder before milking the cows? yes no
Please describe the procedure

4.4 How do you store the milk after milking?
Please describe the procedure

4.5 What's the average milk yield per cow per day (litres)?

litres	< 1	1-2	2-3	3-4	4-5	>5
No. of cows:						

4.6 Do the calves suckle before milking? yes no

4.7 Do you sell the milk? yes no

4.7.1 If yes, do you sell

- on the spot to neighbours
 on the spot to collectors(wholesale)

names and villages of collectors:

- on the spot to vendors (retail)
Are there several vendors?

names and villages of vendors:

- on the market

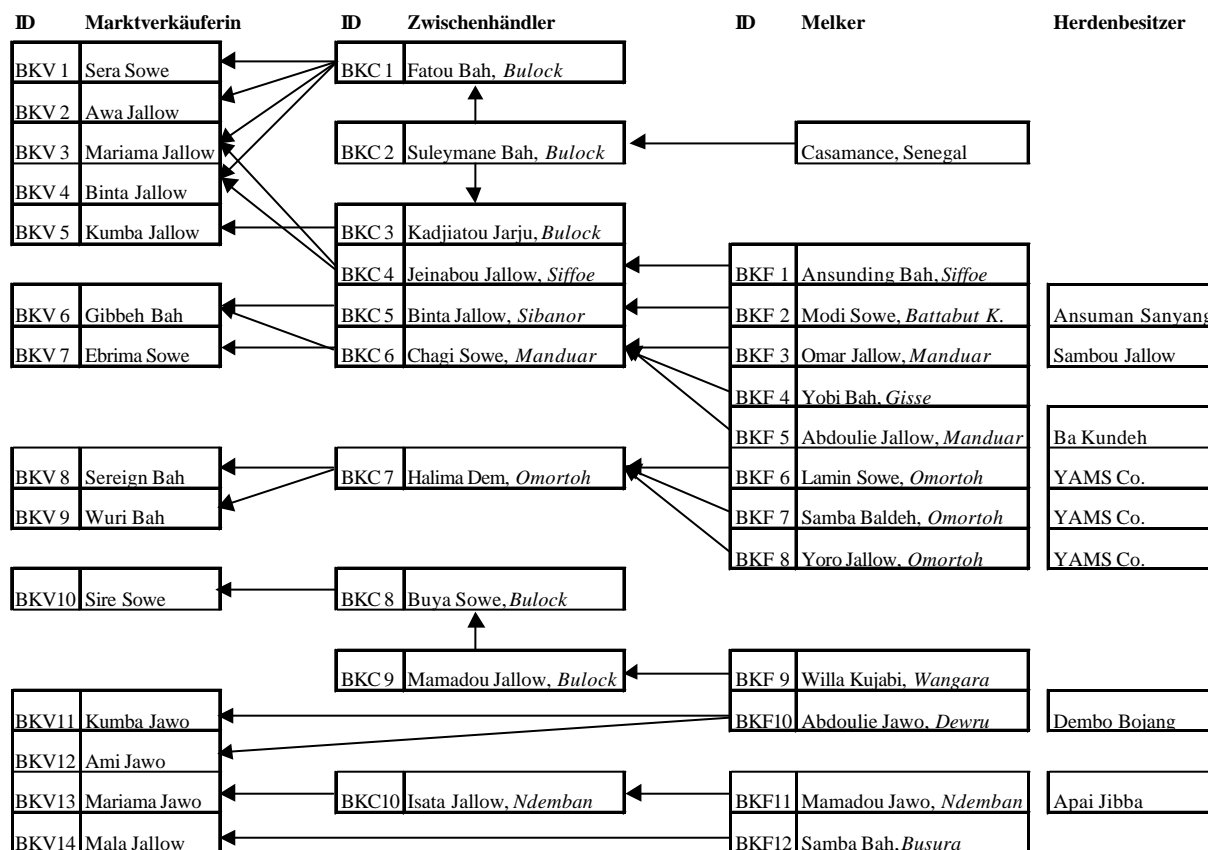
village:

4.8 Do you process the milk before selling? yes no

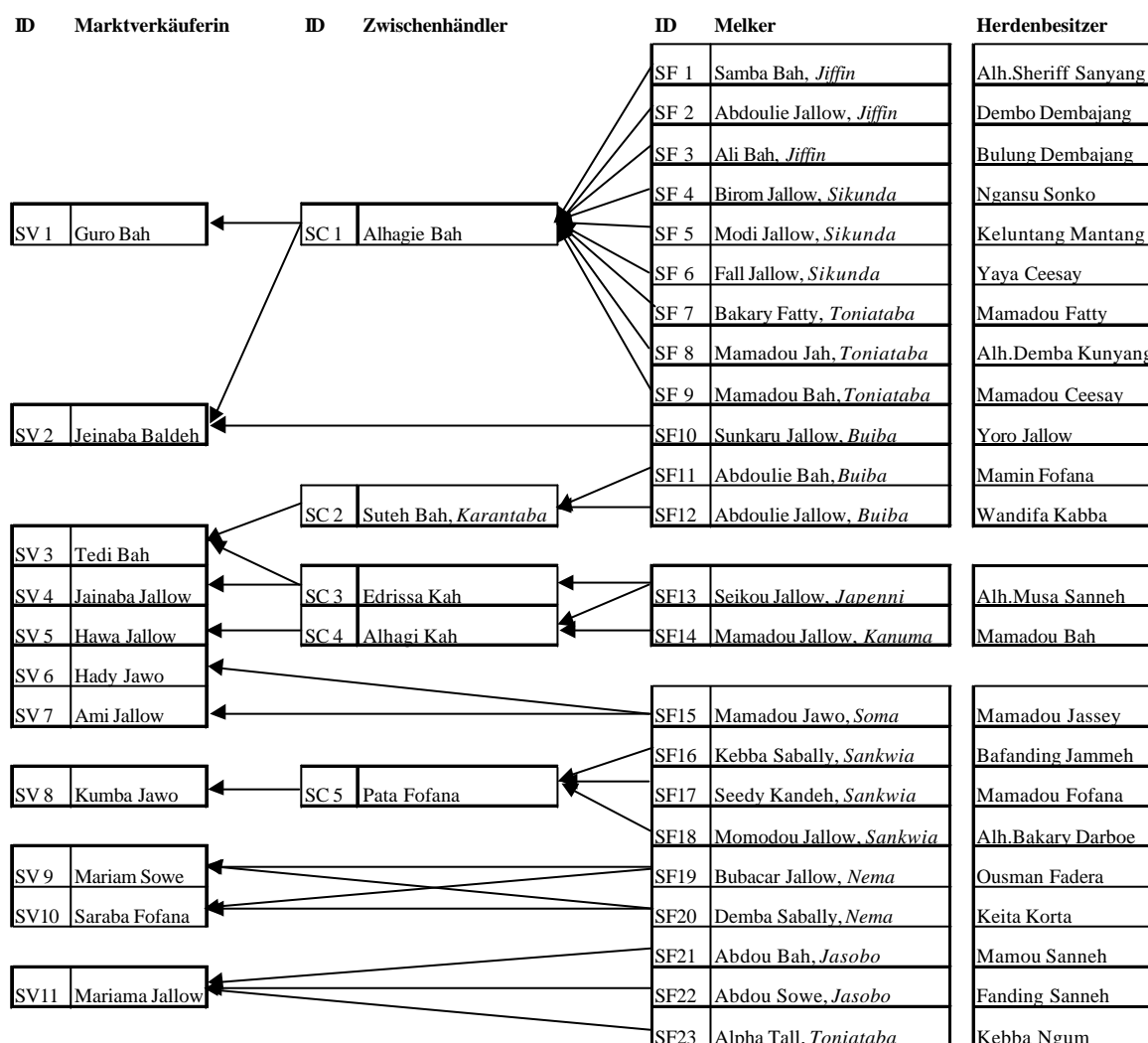
4.9 How do you clean your milk containers? only water soap other

10.4. Marktstruktur-Diagramme

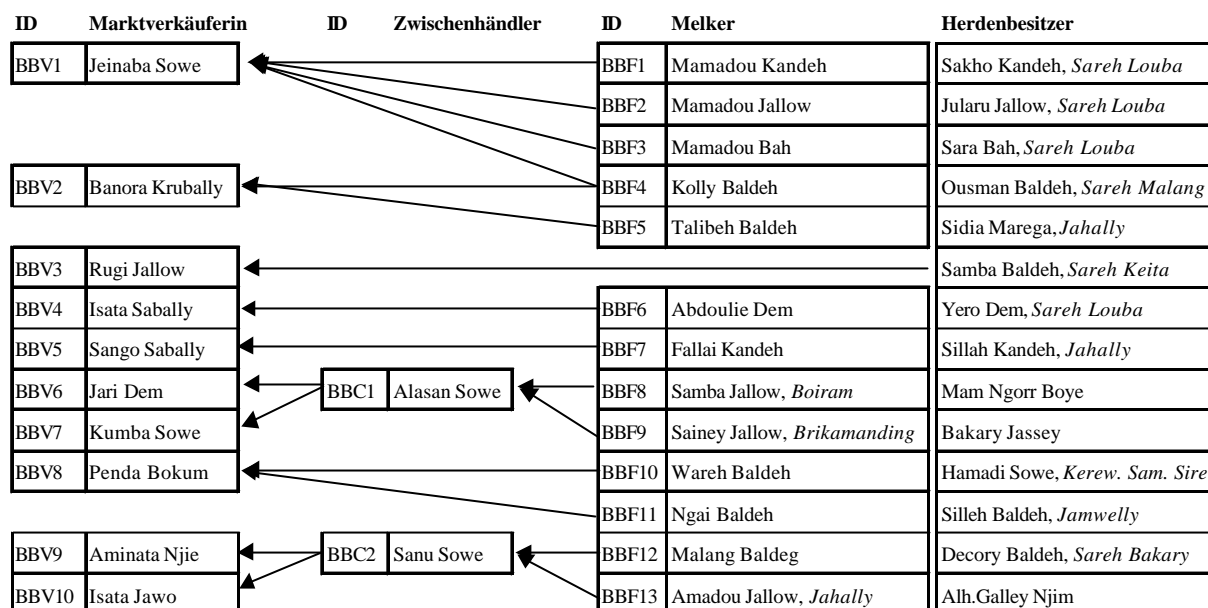
Brikama Marktstruktur-Diagramm



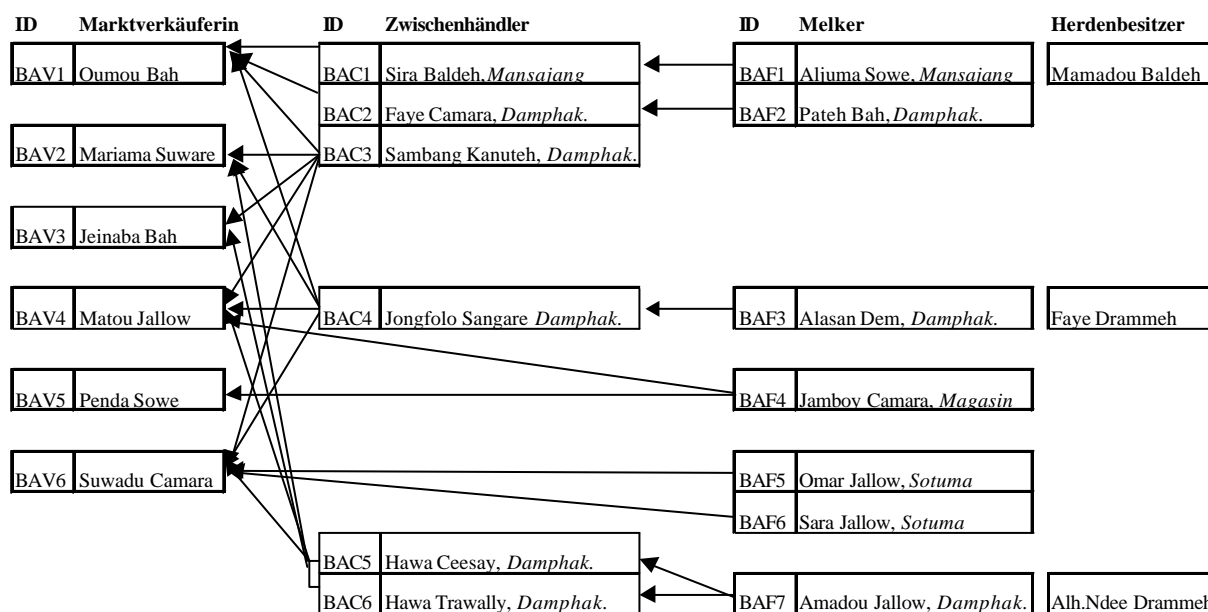
Soma Marktstruktur-Diagramm



Brikamaba Marktstruktur-Diagramm



Basse Marktstruktur-Diagramm



10.5. Nährmedien und Reagenzien

Bestimmung der aeroben Gesamtkeimzahl:

Die Zusammensetzung der Maximalen Wiederbelebungslösung (MERCK) lautet:

5,0	g	Pepton aus Fleisch
3,0	g	Fleischextrakt
12,0	g	Agar-Agar
1000	g	Wasser

Die Zusammensetzung des Plate-Count-Agars (MERCK) lautet:

5,0	g	Pepton aus Casein
2,5	g	Hefeextrakt
1,0	g	D(+)-Glucose
14,0	g	Agar-Agar
1000	ml	Wasser

Nachweis von coliformen Keimen:

Die Zusammensetzung des MacConkey Agars (MERCK) lautet:

17,0	g	Pepton aus Casein
3,0	g	Pepton aus Fleisch
5,0	g	Natriumchlorid
10,0	g	Lactose
1,5	g	Gallesalzmischung
0,03	g	Neutralrot
0,001	g	Kristallviolett
13,5	g	Agar-Agar
1000	ml	Wasser

Nachweis von *Escherichia coli*:

Die Zusammensetzung der Brila-Bouillon (Brillantgrün-Galle-Laktose-Nährmedium) (MERCK) lautet:

10,0	g	Pepton
10,0	g	Laktose
20,0	g	Ochsengalle, getrocknet
0,0133	g	Brillantgrün
1000	ml	Wasser

Die Zusammensetzung des Tryptonwassers (MERCK) lautet:

10,0	g	Trypton aus Fleisch
1,0	g	DL-Tryptophan
5,0	g	Natriumchlorid
1000	ml	Wasser

Nachweis von *Listeria monocytogenes*:

Die Zusammensetzung der Anreicherungsbouillon (FRASER) (MERCK):

5,0 g	Proteose pepton
5,0 g	Trypton
5,0 g	„Lab-Lemco“-Pulver
5,0 g	Hefeextrakt
20,0 g	Natriumchlorid
12,0 g	Di-natrium-hydrogen-phosphat
1,35 g	Kalium-di-hydrogen-phosphat
1,0 g	Aesculin
3,0 g	Lithiumchlorid
1000 ml	Wasser

Listeria-Anreicherungs-Selectiv-Supplement (MERCK):

Halbkonzentriert: 1 Röhrchen auf 1000 ml

Vollkonzentriert: 2 Röhrchen auf 1000 ml

0,25 g	Eisen(III)-ammoniumcitrat
10,0 mg	Nalidixinsäure
12,5 mg	Acriflavin-hydrochlorid
1,0 ml	Wasser

OXFORD-Agar:

23,0 g	Spezialpepton
1,0 g	Stärke
5,0 g	Natriumchlorid
10,0 g	Agar-Agar
1,0 g	Aesculin
0,5 g	Eisen(III)-ammoniumcitrat
15,0 g	Lithiumchlorid
1000 ml	Wasser

Listeria-Selektiv-Supplement (OXFORD) (MERCK):

400,0 mg	Cycloheximid
20,0 mg	Colistin
5,0 mg	Acriflavin
2,0 mg	Cefotetan
10,0 mg	Fosfomycin

PALCAM-Listeria-Selektivagar (nach VAN NETTEN *et al.*) (MERCK):

23,0 g	Pepton
1,0 g	Stärke
5,0 g	Natriumchlorid
13,0 g	Agar
10,0 g	D(-)- Mannit
0,5 g	Ammoniumeisen(III)- citrat
0,8 g	Äskulin
0,5 g	Glucose
15,0 g	Lithiumchlorid

0,08 g	Phenolrot
1000 ml	Wasser

PALCAM-Listeria-Selektiv-Supplement (nach VAN NETTEN *et al.*) (MERCK):

2 Röhren auf 1000 ml

10,0 mg	Polymyxin B- sulfat
20,0 mg	Ceftazidim
5,0 mg	Acriflavin- HCl

Die Zusammensetzung von Tryptone-Soya-Yeast-Extract-Agar (MERCK):

17,0 g	Casein, tryptisch verdaut
3,0 g	Sojapepton
5,0 g	Natriumchlorid
2,5 g	Kaliumphosphat (K ₂ HPO ₄)
2,5 g	Dextrose
6,0 g	Hefeextrakt
12-18 g	Agar, je nach Gelieereigenschaften
1000 ml	Wasser

Beweglichkeitsnährboden (stichfest):

20,0 mg	Pepton aus Casein
6,1 g	Pepton aus Fleisch
3,5 g	Agar-Agar
1000 ml	Wasser

Kohlenhydrat- Nährmedien:

10,0 g	Proteose Pepton
1,0 g	Fleischextrakt
5,0 g	Natriumchlorid
0,02 g	Bromkresolpurpur
1000 ml	Wasser
1,0 ml	5%ige Rhamnoselösung für das Rhamnose- Nährmedium
beziehungsweise	
1,0 ml	5%ige Xyloselösung für das Xylose- Nährmedium

Columbia-Schafblutagar für das CAMP-Phänomen:

20,0 g	Nährsubstrat (Herzextrakt und Peptone)
5,0 g	Natriumchlorid
15,0 g	Agar-Agar
1000 ml	Wasser
50 ml	defibriniertes Schafblut

Nachweis von *Salmonella* spp.:

Die Zusammensetzung des gepufferten Peptonwassers entsprach folgender Rezeptur:

10,0 g	Pepton aus Fleisch
5,0 g	Natriumchlorid
10,0 g	Phosphatpuffer
1000 ml	Wasser

Die Zusammensetzung des RV- Mediums lautet:

4,0	g	Pepton aus Casein
1,0	g	Pepton aus Soja
29,0	g	Magnesiumchlorid-hexahydrat
8,0	g	Natriumchlorid
0,4	g	Di-Kalium-hydrogen-phosphat
0,6	g	Kalium-di-hydrogenphosphat
0,036	g	Malachitgrün
1000	ml	Wasser

Die Zusammensetzung des MÜLLER- KAUFFMANN- Mediums lautet:

0,9	g	Fleischextrakt
4,5	g	Pepton aus Fleisch
1,8	g	Hefeextrakt
4,5	g	Natriumchlorid
25,0	g	Calcium-carbonat
40,7	g	Natriumthiosulfat
4,75	g	Ochsengalle, getrocknet
1000	ml	Wasser

Die Zusammensetzung des BPLS-Agars (Brillantgrün-Phenolrot-Laktose-Saccharose-Agar) (MERCK) ergibt sich wie folgt:

5,0	g	Pepton aus Fleisch
5,0	g	Pepton aus Casein
5,0	g	Fleischextrakt
3,0	g	Natriumchlorid
2,0	g	di-Natrium-hydrogenphosphat, Na_2HPO_4
10,0	g	Laktose
10,0	g	Saccharose
0,08	g	Phenolrot
0,0125	g	Brillantgrün
12,0	g	Agar
1000	ml	Wasser

Für die Zusammensetzung des Xylose-Lysin-Desoxycholat-Agars (XLD) (MERCK) gilt:

3,0	g	Hefeextrakt
5,0	g	Natriumchlorid
3,5	g	D(+)Xylose
7,5	g	Lactose
7,5	g	Saccharose
5,0	g	L(+)Lysin
2,5	g	Natrium-desoxycholat
6,8	g	Natrium-thiosulfat
0,8	g	Ammonium-eisen(III)citrat
0,08	g	Phenolrot
13,0	g	Agar-Agar
1000	ml	Wasser

Die Zusammensetzung des Nähragars (MERCK):

5,0	g	Pepton aus Fleisch
3,0	g	Fleischextrakt
12,0	g	Agar-Agar
1000	ml	Wasser

Die Zusammensetzung des Kligler-Agars (MERCK):

15,0	g	Pepton aus Casein
5,0	g	Pepton aus Fleisch
3,0	g	Fleischextrakt
3,0	g	Hefeextrakt
5,0	g	Natriumchlorid
10,0	g	Lactose
10,0	g	Saccharose
1,0	g	D(+)-Glucose
0,5	g	Ammonium-eisen(III)citrat
0,5	g	Natriumthiosulfat
0,024	g	Phenolrot
12,0	g	Agar-Agar
1000	ml	Wasser

Die Zusammensetzung des Harnstoff-Agars (MERCK):

1,0	g	Pepton aus Fleisch
1,0	g	D(+)-Glucose
5,0	g	Natriumchlorid
2,0	g	Kalium-dihydrogenphosphat
0,012	g	Phenolrot
12,0	g	Agar-Agar
1000	ml	Wasser

Nachweis von Koagulase-positiven Staphylokokken:

Die Zusammensetzung des ETGPA nach Baird-Parker (MERCK) entspricht folgender Rezeptur:

10,0	g	Pepton aus Casein
1,0	g	Hefeextrakt
5,0	g	Fleischextrakt
12,0	g	Glycin
5,0	g	Lithiumchlorid
10,0	g	Natriumpyruvat
15,0	g	Agar-Agar
50	ml	Eigelb-Kaliumtellurit-Emulsion
1000	ml	Wasser

Die Zusammensetzung der Hirn-Herz-Bouillon (MERCK) lautet:

27,5	g	Nährsubstrat (Hirnextrakt, Herzextrakt und Peptone)
2,0	g	D(+)-Glucose
5,0	g	Natriumchlorid

2,5	g	Dinatriumhydrogenphosphat, Na ₂ HPO ₄
1000	ml	Wasser

Nachweis von *Bacillus cereus*:

Die Zusammensetzung des MYP-Agars nach MOSSEL (MERCK) lautet:

10,0	g	Pepton aus Fleisch
1,0	g	Fleischextrakt
10,0	g	D(-)Mannitol
10,0	g	Natriumchlorid
0,025	g	Phenolrot
12,0	g	Agar-Agar
1000	ml	Wasser

Nachweis von H₂S-reduzierenden Clostridien:

Die Zusammensetzung des TSC-Agars (MERCK) lautet:

15,0	g	Tryptose
5,0	g	Pepton aus Soja
5,0	g	„Lab-Lemco“-Pulver
5,0	g	Hefeextrakt
1,0	g	Natrium-metabisulfat
1,0	g	Eisen-ammonium-citrat
14,0	g	Agar-Agar
1000	g	Wasser

TSC-Supplement (MERCK):

2 Fläschchen für 1000 ml TSC-Agar
200 mg D-cycloserin

Nachweis von Hefen und Schimmelpilzen:

Die Zusammensetzung des YGC (MERCK) lautet:

5,0	g	Hefeextrakt
20,0	g	D(+)Glucose
0,1	g	Chloramphenicol
14,9	g	Agar-Agar