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X. — Separators and Treatment of Cream.

By LAURA ROSE,
Demonstrator and Lecturer in Dairying
at the Ontario Agricultural Col-
lege, Guelph, Canada.

[Copyright, 1911, by A. C. McClurg & Co.]
THE invention of the cream sep-
arator gave a great impetus to
the butter industry and revolu-
tionized the handling of milk
and cream.

Many ask the question, "Which is
the best make of separator?" All the
standard makes have good points, and
the question sifts down to a matter of
small details, which appeal differently
to different people. In buying a sep-
arator select a good skimmer, one that
turns easily, is well made of good
wearing material, not too complicated
in construction, easy to clean, con-
venient as to height of cream and skim-
milk spouts and sufficiently large for
the size of the herd.

It must be remembered there is a
vast difference between machines of
the same make, and a purchaser
should satisfy himself that his machine
is a clean skimmer and a smooth, easy
runner before closing the bargain.

The machine should not be set up
in a stable. Occasionally one sees a
separator in an empty cow stall. This
is bad. It is convenient to have a
small room fitted up for the machine
near to or in the stable. Such a room
should be well ventilated and clean
and the floor tight.

Firm Foundation Needed.
The foundation of the separator
should be firm. Even a slight vibra-
tion injures such a finely constructed
piece of machinery. For the same
reason the machine should stand per-
fectly level. A small piece of quarter
inch rubber packing, placed under the
legs before fastening, improves the
running of any separator. Keep all
parts clean. Every week or two run
a little kerosene through the oil chan-
nels to remove the black grease and
accumulated dirt from the bearings,
but do not fail to oil the machine well
afterward. Coal oil is not a lubricant,
simply a cleanser. Use only the oil fur-
nished for the machine or one of equal
ly fine quality.

When starting the machine get up
speed gradually. Put the same pres-
sure on the handle during the entire
circle of it and sustain an even speed.
For close skimming run the machine
a few turns above the tabulated speed
rather than below. Slow speed is the
cause of much poor skimming.

Before turning on the milk put
enough hot water through the machine
to wet and warm the bowl thoroughly.
This insures cleaner skimming and
prevents the cream from sticking to
the skimming device. Do not allow
the milk to get too low in the receiving
can or the cream outlet may clog. The
inflow of milk into the bowl should
be steady and should be approximate
to the capacity of the machine. If for
any reason the machine has to be left
before the run is finished shut off the
flow of milk and if convenient flush
out the bowl with a little warm water
to prevent the cream outlet from
clogging. At the end of the run enough
warm water should be put through the
bowl to force the cream out. This
water must be pure, for some of it of
necessity gets into the cream, but
allow only what is necessary to flush
the cream from the bowl. Too hot wa-
ter will scald the milk on the bowl and
make it hard to clean. Skimmilk may
be used for flushing out the bowl, but
warm water is better.

Always Strain Before Separating.
Milk should always be strained be-
fore separating. The sooner the dirt
is removed the better. Moreover, hairs,
small pieces of straw, etc., are apt to
close the outlets. Putting two thick
pieces of cheesecloth over the receiv-
ing can and holding them in place with
several clothespins is a convenient
method.

Milk is at its best for separating im-
mediately after being drawn from the
cows. Should it cool below 55 degrees
it is better to warm it, although some
machines do good skimming at a lower
temperature, but there is always a risk
of losing cream when the temperature
of the milk is low.

Should the milk supply become so
small that it seems hardly worth while
starting up the machine the night's
milk may be held till the morning, but
to preserve the quality it should be
quickly cooled as soon as milked.
This held over milk should have the
cream well stirred in and be heated to
100 degrees or over, for no harm, but
really good, results from having the
milk hot. Run it through after the
morning's milk has been separated.
This practice has its disadvantages.

There is one point that must be em-
phasized. The machine must be thor-

oughly cleaned after each time of us-
ing. First rinse the parts which have
come in contact with the milk in luke-
warm water, then wash in hot water
in which some washing powder has
been dissolved. Use the brushes pro-
vided by the manufacturers to clean
the different parts. Rinse in scalding
water and place on a rack to drain and
dry. Never use a drying cloth. The hot
water should be sufficient.

Do not subject the rubber ring to too
hot water. Heat ruins rubber.

The separator brushes should be fre-
quently scalded in a strong soda solu-
tion to keep them sweet. Have a
square of cloth to throw over the
frame of the machine after it has been
wiped. This prevents dust getting in
the bearings.

A machine should not leave over .05
per cent fat in the skimmilk when
properly managed. When the loss ex-
ceeds this it is time to look for a cause.
Real good skimming does not leave
over .02 per cent.

It is a good plan occasionally to
make a test of both the skimmilk and
the cream. The fact that no cream
rises on the skimmilk overnight is no
sign that a separator is doing good
work. When making butter on the
farm in the barrel churn I would have
the cream test from 24 to 28 per cent
fat, but if it is to be sent to the cream-
ery have it from 30 to 35 per cent. It
is our duty to help the creameryman
all we possibly can. By sending him
a rich cream we do much toward mak-
ing the butter a better quality.

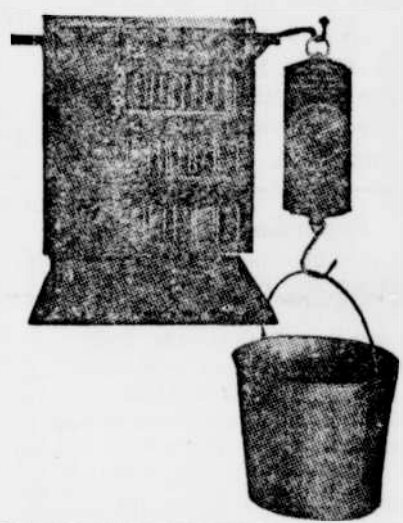
Where eight or ten cows are kept get
a machine with a capacity of not less
than 500 pounds per hour. All ma-
chines, except the smaller sizes, are so
constructed that they may be connect-
ed with power.

Very often when the cows freshen in
the spring and when the grass stimu-
lates the milk flow no change is made
in the adjustment of the cream screw.
Usually the fresher the cows in milk
and the heavier the flow the lower the
percentage of fat, and so the necessity
for turning in the screw, so as to have
less skimmilk in the cream.

Pasteurization of Cream.
Pasteurization, while not removing
all the ills which are apt to befall
cream, helps to a great extent.

For creamery work the practice can-
not be too highly recommended.

On the farm, where conditions are
under one's special supervision and



HANDY WEIGHING AND SAMPLING APPA-
RATUS FOR TESTING COWS.
[Note the drop shelf on which the record
sheet is tacked.]

control, it is not necessary to pasteur-
ize, nor do we advocate it.

To pasteurize cream place the can
containing it in a vessel of hot water.
Stir the cream occasionally and bring
it to a temperature of 175 degrees.
Authorities give a range of tempera-
tures from 190 to 185 degrees. Leave
it covered at that temperature for
twenty minutes. It will cool very little
if just lifted out of the water. Then
rapidly cool to 60 degrees or below.

To sterilize cream or milk heat it to
212 degrees, the boiling point. This tem-
perature is supposed to make it germ
free. Sterilized milk is not so digestible
as raw milk or pasteurized milk.

If a reputation for good butter is to
be established and maintained it is
the farmer who has to do it.

Have the cream sweet and delicate
in flavor. Avoid feeds that will taint
the milk. Do not feed turnip tops or
rape. Do not imagine turnips can be
eaten by the cows, even after milking,
and not affect the quality of the butter.
Turnips have their place, but it is not
on the menu of a milking cow.

Milk from freshly calved cows should
not be skimmed until after the eighth
milking.

Put up ice and study the problem
of keeping the cream cold. The tem-
perature must be kept low, 50 degrees
or under, in summer and the cream
quickly cooled after separating. In
winter as well as in summer. Each
skimming of cream should be cooled
before mixing with that already cooled.
If water is scarce for cooling purposes
the cream may be put in shallow pans
and set in a cool, clean cellar on a
stone or cement floor. The stone and
cement are good conductors of heat
and soon reduce the temperature by
drawing the heat from the cream.

It is best to have the cream delivered
at the creamery every day in summer,
or at least three times a week, and not
less than twice weekly in winter.

The farmer's aim should be to send
cream testing from 30 to 35 per cent
fat.

When cream is taken to a creamery
there is usually quite a little talk about
the "overrun," and frequently the term
is not understood.

The overrun consists of the pounds
of butter made over the pounds of fat
in the milk or cream. This difference
between the fat and the butter is made
up of water, salt and casein or curd
and varies under different conditions.
The average overrun is about 15 per
cent, but many creameries do better
than that.

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