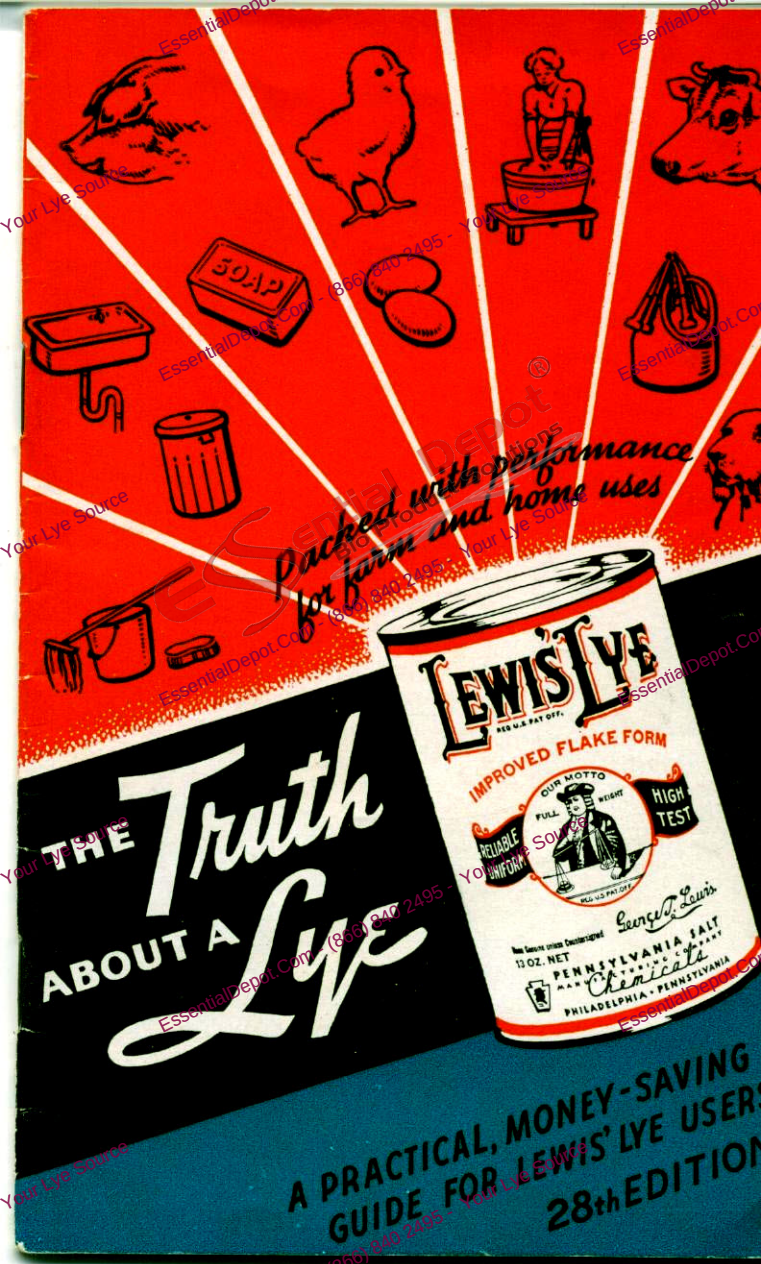
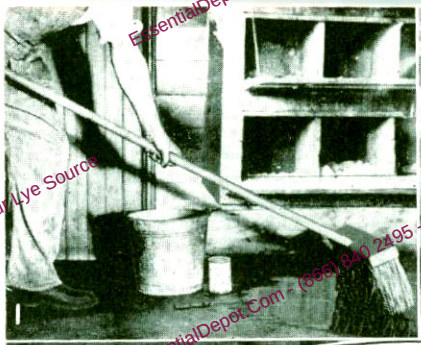
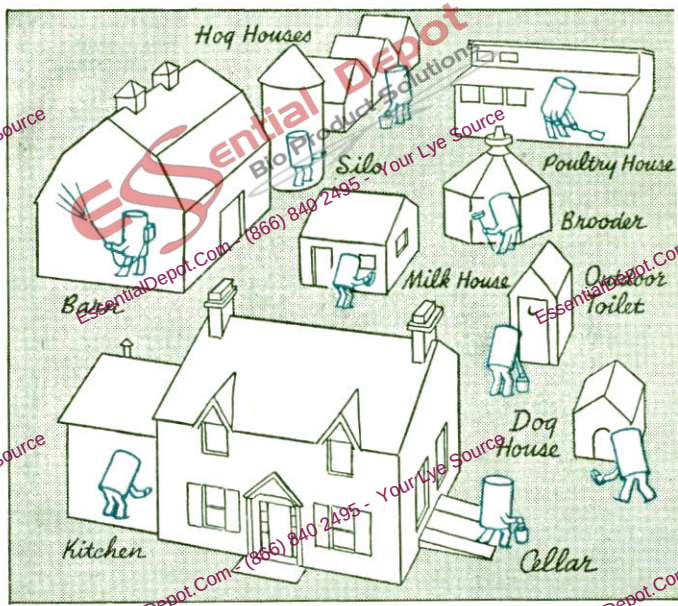

SOAP
Packed with performance for farm and home uses
LEWIS' LYE
REG. U.S. PAT. OFF.
IMPROVED FLAKE FORM
OUR MOTTO
FULL WEIGHT
HIGH TEST
RELIABLE
UNIFORM
George D. Lewis
12 OZ. NET
PENNSYLVANIA SALT MANUFACTURING COMPANY
Chemicals
PHILADELPHIA · PENNSYLVANIA
THE Truth ABOUT A Lye
A PRACTICAL, MONEY-SAVING GUIDE FOR LEWIS' LYE USERS
28th EDITION



1. Barns, poultry houses cleaned and disinfected easily with Lewis' Lye.
2. First prize getting hire barro raised on Lewis' Lye Sanitation Plan.
3. Thousands of farmers add Lewis' Lye to the hog feed every day.
4. Lewis' Lye solution sprayed on walls, ceilings, pens, helps control disease.
5. Lewis' Lye helps rid barns of deadly bovine abortion germs.
6. Dairymen find Lewis' Lye economical, dependable to clean and disinfect milking machines.
7. Lewis' Lye helps protect chicks against bacillary white diarrhea and other disease.

Meet LEWIS' LYE

"All-Around Handy Man" in the Home and around the Farm



What other product will do so many helpful things—at so little cost—as a 10-cent can of Lewis' Lye? The housewife saves the cost of expensive soaps, cleansers, water softeners, drain solvents, etc. The farmer saves on expensive cleaners, disinfectants, sarcoptic mange dips, etc. This handbook tells you how. Keep Lewis' Lye on hand always. Many farmers buy Lewis' Lye by the case of 4 dozen cans.

INDEX

Preserve this Book for Future Reference

WHAT THE BRAND NAME "LEWIS' LYE" MEANS TO YOU

Lye is a chemical. It differs from most products you buy . . . you cannot determine its quality by looking at it, or by any of the simple tests that make you a good judge of articles like cloth or food. With lye, as with drugs, you must have confidence in the brand and its manufacturer. You can rely on Lewis' Lye because:—

1. Lewis' Lye has been a favorite with farmers and housewives for 3 generations . . . has *proved* its dependability.
2. Lewis' Lye is made by the Pennsylvania Salt Mfg. Co., the first firm in America to manufacture lye for domestic purposes—over 80 years ago.
3. The Pennsylvania Salt Mfg. Co. are *manufacturing chemists.* Their double refining process produces lye that is low in salt content, low in carbonates, and extremely low in iron. This company maintains the most rigid quality-control to safeguard the uniformity of the lye thus produced. Spectrographic analysis is among the methods used—one of the most sensitive, precise known to science.
4. The unwavering uniformity of Lewis' Lye resulting from the above process has given Lewis' Lye users confidence in the same dependable results every time they use it.
5. Lewis' Lye is extremely high test . . . does more work per can.
6. Lewis' Lye is packed in the improved flake form, another example of Lewis' Lye leadership. It keeps irritating dust to a minimum . . . dissolves quicker . . . pours freely.
7. Lewis' Lye reaches you full strength because it is packed in air-tight cans. The friction top opens easily, keeps Lewis' Lye dry and full strength until completely used.

For Your Protection

Brands of lye differ. Lye that is not always full strength is not dependable. Take no chances on live-stock and poultry losses resulting from a failure of your sanitation program . . . do not risk a season's soap-making grease . . . by using inferior or unknown lye. The directions in this handbook are based on using top quality Lewis' Lye. *Avoid substitute brands* claimed to be "just as good." Your local grocer has Lewis' Lye or can get it for you. You cannot afford to take chances when genuine Lewis' Lye costs only 10c per can.

Lewis' Lye has been tested and approved at agricultural colleges and experiment stations.

PRACTICAL SANITATION

Sanitation—keeping things clean and disinfected—and proper management are necessary for proper health and growth. When civilized mankind settled in permanent homes and crowded cities, sanitation became vital in controlling plagues and chronic disease. When animals and fowls were taken from their wild, migratory life and cooped and crowded on the farm, they were subjected to similar disease and parasite dangers. Farm sanitation and proper management have been slower to develop, but are just as necessary if animal and poultry health are to be maintained.

Prevention Is Best Treatment

Sanitation is a prime example of the old saying "an ounce of prevention is worth a pound of cure." Sanitation and proper management help prevent some diseases and parasite infestations from *starting* . . . or where these do exist, help control their spread or reoccurrence. When disease breaks out, get in touch with the Department of Veterinary Medicine at your state agricultural college or with a competent local veterinarian. They will advise how to control the outbreak and treat the animals or fowls infected.

Every farmer knows unhealthy hogs, cattle and poultry are unprofitable. They produce less meat, butterfat and eggs; and these products bring lower prices. Farm sanitation, then, becomes a matter of good business practice.

Federal and state agricultural authorities have long preached the doctrine of sanitation and good management. Farm papers, County Agents, Vocational Agricultural Teachers have constantly urged it. Nearly every well-informed farmer will agree that sanitation and good management do great things in saving your pigs, calves and chicks . . . in causing faster gains on less feed . . . in yielding more butterfat and eggs . . . yet many farmers still practice it very irregularly, if at all. Why?

Sanitation is often avoided because it is thought to be costly or hard work, or to leave a disagreeable smell. While certain disinfectants do have these limitations, Lewis' Lye does not. Growing realization of this fact is causing thousands of farmers to start practising Lewis' Lye Sanitation every year. They find it offers the following advantages:

Sanitation Need Not Be Expensive

Lewis' Lye Sanitation is within the reach of every farm! Lewis' Lye dissolved in water makes a powerful disinfectant costing only *one cent a gallon!* This low cost permits frequent, thorough sanitation—all year around—it will help prevent the spread of disease germs and parasites by contaminated surroundings such as eating and drinking troughs, floors and walls.

Cleans and Disinfects

A hot solution of Lewis' Lye, made by adding 1 can to 10 gallons of warm water, applied after removing bedding, litter and droppings, cuts through remaining filth, grease and dirt making surfaces clean. Then spraying or scrubbing with a hot solution of Lewis' Lye of the above strength helps kill many disease germs. This function makes Lewis' Lye a practical farm disinfectant.

Odorless

Those accustomed to the "medical" or crude carbolic smell of other disinfectants welcome the fact that premises disinfected with Lewis' Lye have no odor except the fresh sweet smell of cleanliness. Lewis' Lye destroys foreign odors when it reaches their source, and has no odor of its own to irritate animals or poultry or to taint milk, cream, butter or eggs.

Scientifically Proven

One reason why Lewis' Lye has been a favorite with farmers is because its manufacturers have been "farm-minded" . . . have worked for years to help solve farm problems. In addition to research year after year, they established an Industrial Fellowship at the University of Wisconsin. There the germ-killing properties of Lewis' Lye were *proven* . . . compared with other disinfectants. Tests showed that Lewis' Lye is 6 times as strong as pure carbolic acid for killing the germs of Typhoid Fever, using the U. S. Department of Agriculture's standard test. Using other germs and a very similar method of test, it was found that Lewis' Lye kills Br. abortus (organism of contagious abortion of cattle) and S. pullorum (organism of bacillary white diarrhea of chickens). Tests on 5 strains of Br. abortus showed that 1 part of Lewis' Lye in 800 parts of water killed in 10 minutes, and on S. pullorum showed 1 part of Lewis' Lye in 1200 parts of water killed in 10 minutes. Lewis' Lye is effective against many other disease germs.

Economical

The above tests showed the amazing economy of Lewis' Lye Sanitation. For example, in tests on bacillary white diarrhea germs in the presence of chicken manure at 45° F., the Lewis' Lye solution was less than 1/25th as costly as carbolic acid solution of equal killing strength. Think how much oftener and more freely you can afford to use Lewis' Lye to help protect your livestock and poultry.

Tests show Lewis' Lye 6 times as strong as carbolic acid for killing typhoid fever germs using F.D.A. method of test.

HOG SANITATION

Hog sanitation costs little, yet pays big profits. For example, the following results were reported in University of Illinois Experiment Station Circular No. 306 (1931): Tests conducted on 154 farms showed that 1.7 more pigs per litter were raised, due to sanitation. One fourth fewer sows were required to raise the same number of pigs as under the old method. Runts raised the old way averaged 18 per 100 pigs, while under sanitation the following year on the same farms runts were reduced to 1 per 100 pigs. With sanitation, farmers raised 98.2% of the pigs saved at farrowing time. The sanitation pigs, when 4 months old, averaged 28 pounds more than non-sanitation pigs on the same farms. Sanitation pigs required about 20% less feed per 100 pounds of gain. They were ready for market 7 weeks younger than the usual market age with old methods, and were more uniform in weight and condition.

Think what these improvements would mean in dollars and cents in your own herd. More pigs per litter . . . runts almost eliminated . . . faster gains, on less feed . . . a shorter feeding period . . . earlier marketing, when prices are usually higher . . . hogs that grade higher at the market. These benefits are available at small cost and with a little systematic work.

Large Roundworms

Large roundworm infestations cost hog raisers millions of dollars annually through lost and stunted pigs, wasted feed and reduced market prices.

Agricultural College experiments sponsored by the makers of Lewis' Lye showed that the most serious menace and losses caused by the roundworm do not come from the mature worm in the intestines but during the early development in the worm's life cycle. Worm eggs—so small they cannot be seen by the naked eye—are passed out in the hog droppings and develop to the hatching stage on the surface of

Quality pays, when disinfecting—use Lewis' Lye

the soil. These are picked up by the rooting pigs and hatch in the small intestines. A few minutes after hatching, the tiny worms burrow through the intestine walls and get into the blood stream, thence to the liver and lungs where they develop, feeding on the delicate tissues. Irritation thus caused in the lungs results in a "thumpy" cough which brings the worms into the throat and mouth. They are swallowed and pass to the intestines where they may live for months or even years sometimes growing to 15 to 17 inches in length. There they consume feed intended to fatten the hog, and generally contribute to its unthrifty condition.

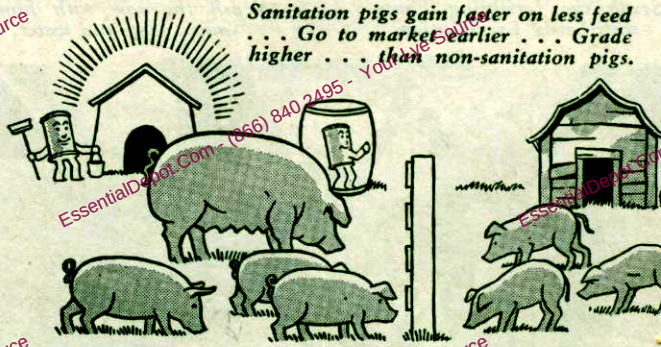
Roundworms are prolific egg layers; one was found to contain as many as 26,000,000. These eggs are passed out in the droppings, are later picked by the same or other hogs, and the roundworm cycle of destruction begins all over again.

Roundworm eggs remain fertile on the surface of the soil for long periods of time. They seem to have great resistance to cold and heat. They are particularly resistant to most disinfectants. Oklahoma A. & M. College Circular No. 225 (1929) states, "It has been found experimentally that hot lye water is the only thing that will destroy worm eggs."

As the most severe damage is done by the young worms that leave the intestines immediately after hatching, vermifuges offer only partial protection. The best solution is to break up the worm's life cycle by destroying the eggs before they are picked up by the swine. The Lewis' Lye Hog Sanitation Plan is a practical economical way of doing this.

Disease

The Lewis' Lye plan of sanitation will aid in preventing the spread of diseases in general by contaminated surroundings.



Sanitation pigs gain faster on less feed . . . Go to market earlier . . . Grade higher . . . than non-sanitation pigs.

While this plan will help to protect hogs against cholera from being spread by contaminated surroundings, this highly contagious disease may be contracted in spite of sanitary practice; therefore vaccination is advisable. If it breaks out in your herd, consult a veterinary.

Erysipelas

Swine erysipelas (also called "diamond skin disease") has increased greatly during the last 20 years. Difficult to diagnose, erysipelas sometimes has been mistaken for cholera and gastro enteritis. Erysipelas is a serious menace to hog profits as it reduces rate of gain, wastes feed, and often results in death losses. Turkeys, ducks and lambs may be infected by diseased hogs. The makers of Lewis' Lye cooperated with a leading agricultural college in the testing of various disinfectants in killing erysipelas germs. As shown by the chart on page 9, prepared at the college, Lewis' Lye was the most effective of the disinfectants tested. To help protect your herd against the spread of profit-destroying erysipelas by contaminated surroundings, treat hog quarters, equipment and shipping trucks as described below. Isolate purchased pigs before adding to your herd.

Lewis' Lye Hog Sanitation Plan

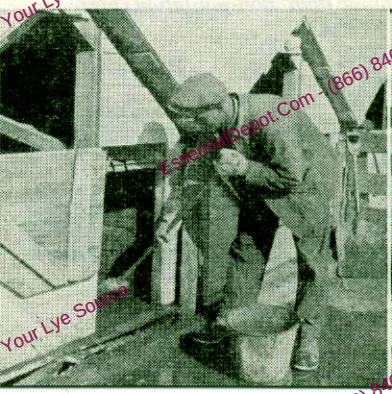
By following this plan carefully you can help prevent troublesome diseases and parasite infestations from being transmitted by contaminated surroundings, and increase your hog profits.

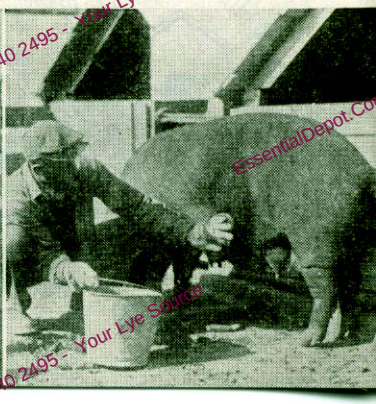
1. Clean and scrub farrowing and other hog houses with a solution of 1 can of Lewis' Lye to 10 gallons of hot water.

2. If the houses do not have wood or cement floors, remove

Scrub the farrowing house with Lewis' Lye solution.

Wash the sow with home-made soap and water.





the top soil from these floors and replace with soil which has not been contaminated with hog droppings.

3. Wash the sow with homemade soap and water to remove worm eggs and disease-laden dust adhering to udder and teats, before putting her in clean quarters.

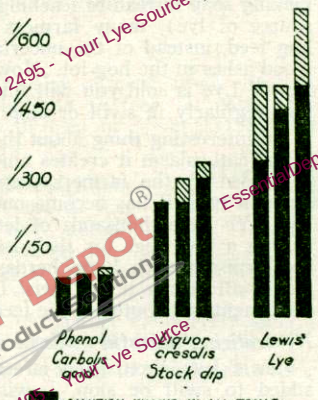
4. Haul the sow and pigs to fresh pastures where hogs have not been run previous year. Keep there at least 4 months.

5. Where it is necessary to use old yards or runways, plow the ground deeply, as close to buildings, fences, etc. as possible.

6. Scrape the feeding troughs and floors thoroughly; then scrub with same Lewis' Lye solution. Repeat at frequent intervals.

Chart showing highest effective dilutions of 3 disinfectants against Swine Erysipelas germs.

(In the presence of 5% pig manure at 68° Fahrenheit and with exposures of 5, 10, and 30 minutes.)



SHIPPING HOGS AND CATTLE

Improperly cleaned and disinfected shipping trucks and railroad cars transmit disease and parasites. They can be cleaned and disinfected easily and inexpensively the Lewis' Lye way. Lewis' Lye solution removes foreign odors when it reaches their source and has no odor of its own, permitting shipping trucks to be used for other types of hauling. Treat as above. *Caution.* Do not permit an unclean truck to enter your farm.

BUTCHERING USES

A hot solution of Lewis' Lye helps loosen hog hair and place the skin in a sanitary condition by removing the scurf. After the hog has been stuck and allowed to bleed thoroughly, dip the carcass in a barrel or tank of hot water (150° F.) in which has been dissolved ¼ can of Lewis' Lye for each 30 gallons of water used. Leave the carcass in the water only long enough to permit the hair to be pulled out easily. If the hog is larger than the container, dip the tail end first.

Clean and disinfect curing containers and butchering utensils by scrubbing with a solution of 2 rounded tablespoons of Lewis' Lye in each gallon of water. Rinse with fresh water.

FEEDING LEWIS' LYE TO HOGS

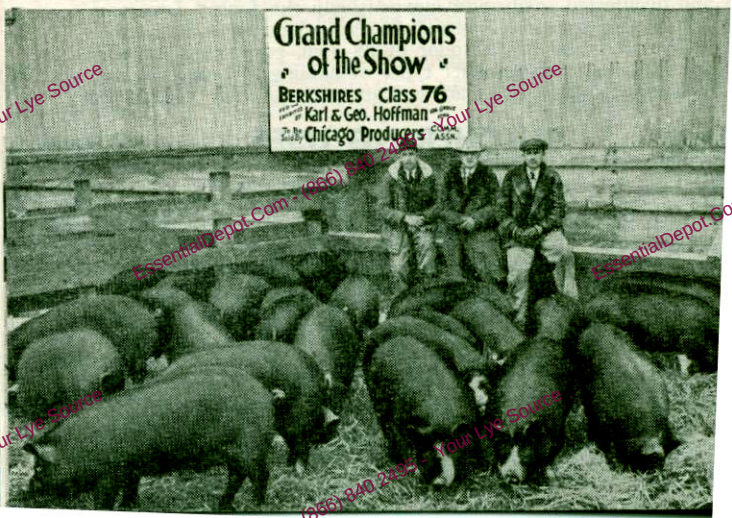
There is nothing new about feeding Lewis' Lye to hogs. This practice has been handed down from father to son for 3 generations. When farmers started using Lewis' Lye for making soap instead of leaching wood ashes (the old fashioned source of lye), many farmers started adding Lewis' Lye to hog feed, instead of the uncertain, messy practice of dumping wood ashes in the hog lot. Now, in nearly every district where Lewis' Lye is sold you will find many farmers feeding Lewis' Lye regularly in swill or slop.

An interesting thing about the feeding of Lewis' Lye to hogs is the enthusiasm it creates among hog raisers. This practice, developed by the farmers themselves, has spread from farm to farm until it has become one of the leading uses of Lewis' Lye. We have thousands of letters in our file—from farmers raising a few hogs for their own consumption, from "market hog" raisers with huge herds, and from breeders of champions—all telling how Lewis' Lye has helped them. Some of the benefits attributed to the feeding of Lewis' Lye to hogs are:

Neutralizing harmful acids in swill or slop.

Lewis' Lye is extremely effective in neutralizing acids. When added to swill or slop, Lewis' Lye helps to neutralize the excessive acidity often found in this feed.

Karl and George Hoffman of Ida Grove, Ia., winners of the 1939 International Livestock Show car lot hog competition write: "We've fed LEWIS' LYE to our hogs for years. Our 1939 Grand Champions were fed LEWIS' LYE from weaning time until shipment to the show."



Increasing digestibility of oat and barley hulls.

It is known that lye solutions are capable of hydrolizing cellulose and thus making certain fibers more digestible. Experiment Station tests indicate oat hulls and barley hulls increase in digestibility when soaked in lye solutions. To permit full action of the Lewis' Lye on the grain, add it to the slop or mash the night before.

Imparting alkalinity to feed.

The addition of Lewis' Lye to slop or mash is an effective, inexpensive way to impart alkalinity to feed. It costs only 2½ cents for each 50 gallons of feed or about 1/15th cent per hog, per feeding.

Directions for Feeding

Dissolve ¼ can of Lewis' Lye in a 50 gallon barrel of slop or swill—or else use in the proportion of ¼ teaspoon to each gallon. When preparing a mash, dissolve ¼ teaspoon of Lewis' Lye in each gallon of water just before the grain is added.

When hogs are on dry feed or pasture exclusively add ¼ teaspoon of Lewis' Lye to each gallon of drinking water.

Feed Lewis' Lye DAILY from weaning to slaughtering time.

BEEF CATTLE SANITATION

Steers roaming the plains do not need sanitation, but the growing practise of fattening steers on small feed lots has made cattle sanitation increasingly important. Scrape dirt and filth from barns, feeding troughs and floors; then scrub with a solution of 1 can of Lewis' Lye to 10 gallons of water. Spray walls with the same Lewis' Lye solution. Lewis' Lye is very effective in helping to prevent the spread of contagious abortion in cattle by contaminated premises.

DEHORNING CALVES

Horns, in addition to endangering the herd, reduce the market value of a steer. The August 1939 issue *National Livestock Producer* Magazine states: "Stocker and feeder buyers on the average will buy cattle without horns at 35c per hundred more than they will pay for cattle with horns. They consider horns a liability in the feed-lot. Packer buyers agree that horns are a liability too, because they will pay 25c per hundred more on the average for cattle without horns. Lack of proper gains in the feed-lot, and bruised meat on the hook are the 2 big counts against cattle with horns. This is quite a heavy penalty for neglecting a rather simple dehorning job when the cattle were calves" The growth of horns on calves can be prevented easily and humanely with Lewis' Lye. See directions on page 21.

LEWIS' LYE SARCOPTIC MANGE DIP

Sarcoptic mange, the most serious of hog skin diseases, costs hog producers hundreds of thousands of dollars every year. Mangy hogs are docked from 25c to $2.00 per hundred weight when marketed. The *indirect* loss may even be greater because irritation of sarcoptic mange, according to U. S. Dept. of Agriculture Farmers' Bulletin No. 1085, causes arrested growth, unthrifty condition, decreased vitality, functional disturbance and increased death rate. . . Dipping is the best method (of treatment)."

History of Lewis' Lye Dip

Because the usual treatments for sarcoptic mange had certain disadvantages, the makers of Lewis' Lye started experiments, through their Industrial Fellow at the University of Wisconsin and J. J. Coyner a prominent hog expert, which disclosed that a combination of Lewis' Lye and sulphur was very effective and had several advantages. The Lewis' Lye Dip is cleaner than oil. It is not irritating to the skin of hog or man, a distinct advantage over crank case oil which often contains lead (from gasoline) which irritates and is injurious to the hog's skin. Lewis' Lye Dip ingredients are easy to obtain: Sulphur can be bought at any druggist, Lewis' Lye from any grocery. As Lewis' Lye is packed in air-tight metal containers, it remains at full strength until used, which may not be the case with lime. The Lewis' Lye Dip is easy to prepare—boiling is not necessary.

Lewis' Lye Dip is inexpensive. To make 40 gallons—sufficient to treat 100 pigs—all you need is 3 cans of Lewis' Lye and 5 lbs. of flowers of sulphur. It costs less than 1c per each pig dipped.

How to Prepare

1. Place the sulphur in a barrel or old bucket (not aluminum) and add 3 cans of Lewis' Lye. Mix well with a wooden stick; then stir steadily as ½ cup of water is added. As the stirring continues, it will be noticed that the mixture becomes very warm and the sulphur turns red, indicating a chemical reaction is taking place which turns the sulphur into a soluble form that penetrates into the sarcoptic mange mite burrows.

2. Add 40 gallons of water to make the dip.

When using large vats, prepare sufficient solution to immerse hogs completely. Mix ingredients in the same proportions as above.

The flake form of Lewis' Lye minimizes fumes.

When to Treat

Treat infected animals when you discover the disease, and isolate them at once. A wise precaution is to treat *all* hogs just before they go into winter quarters. Do not dip hogs in extremely cold weather.

When the hogs are treated as a preventive measure, or when only a slight mangy condition exists, one dipping is sufficient. For a more severe condition, 2 or even 3 treatments may be necessary. Ten days should elapse between treatments and a fresh solution prepared each time.

How to Treat

Scrub severely affected parts with the solution and a stiff brush before dipping. Immerse smaller pigs in a barrel, holding by the forelegs. Treat larger animals in a regular dipping plant or vat; or spray or scrub with a stiff brush, making sure that the Lewis' Lye Dip covers *all* of the skin surface—especially under the legs, belly and ears.

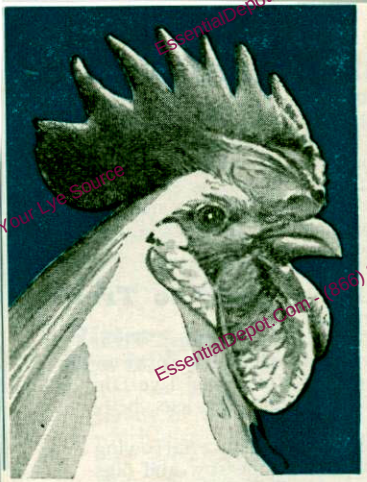
Sows should not be dipped within 2 weeks before farrowing time. When the pigs are about 3 weeks old the sow and pigs may be dipped without risk. Be sure to dip all the litter to prevent the sow from failing to recognize and suckle any pigs that are not dipped.

Sanitation Important

Clean, sanitary quarters aid in controlling the spread of all parasites and disease. Clean and then scrub or spray the quarters with a solution of 1 can of Lewis' Lye in 10 gallons of hot water.

There is one BEST in everything.

LEFT. One of the pigs used in the first Lewis' Lye Sarcoptic Mange Dip tests. It was very scabby . . . the left ham was nearly bare of hair . . . weight about 60 lbs. . . . a typical case of severe sarcoptic mange infestation. RIGHT. The same pig 19 weeks later . . . weight 250 lbs. The sarcoptic mange condition completely disappeared after two dippings—10 days apart—in Lewis' Lye Sarcoptic Mange Dip.



POULTRY SANITATION

Every poultry raiser knows that to be profitable, poultry must be healthy. Disease and parasite ridden birds cannot produce meat and eggs on a paying basis. Why do so many beginners in poultry raising do well the first year and then run into serious trouble the following years? Because the disease germs and parasites accumulate, unless controlled by proper sanitation, infecting all birds that are raised or added to the flock. Read any Government or State Experiment Station bulletin, consult any County Agent or Veterinarian and you will find they all agree that adequate sanitation is absolutely essential to successful poultry raising.

Rules for Sanitation

1. Help control disease infection and parasite infestation *from local sources* by cleaning and disinfecting poultry premises and feeding utensils regularly with Lewis' Lye. Disinfect drinking water with B-K. Raise chicks on clean ground. Rotate pasture for adult birds. Do not mix young and old birds.
2. Help protect poultry *from outside sources* by isolating additions to your flock for 2 weeks. Do not allow visitors on your poultry premises. Disinfect shipping crates with Lewis' Lye solution.
3. When sickness breaks out, isolate the ailing birds and kill and burn the hopelessly ill ones. Do not return doubtful birds to the flock.

Effective Disinfection

A prominent agricultural college authority, after experiments with various disinfectants, including Lewis' Lye, wrote in a leading poultry magazine: "The most practical disinfectants are sunlight, drying, and a dilute solution of lye." As sunlight and drying are usually impractical in poultry house interiors, Lewis' Lye is the logical disinfectant to use.

This same authority states: "All houses, feed hoppers and water troughs previously used for chickens should be thoroughly scrubbed and soaked in a hot lye solution. This will not only kill the round worm eggs, but will also kill many disease germs with which it comes in contact." His tests

showed Lewis' Lye to be extremely effective for killing germs responsible for bacillary white diarrhea of chickens. (See page 5).

Cornell Extension Bulletin 186 (1929) states: "When a serious outbreak of coccidiosis occurs in a flock, kill and burn all badly affected chicks. Clean and disinfect houses with a lye solution . . . . Clean houses daily for several days if the epidemic is bad." A special diet is recommended for the remaining birds. Use Lewis' Lye solution for cleaning and disinfecting poultry houses. During epidemics, clean daily all dropping boards.

The spread of many poultry diseases by contaminated premises and objects may be guarded against by a regular sanitation program before they attack the flock.

Powerful Cleaning

While all foreign material should be scraped and swept out before any disinfectant is used, it is impossible to eliminate it completely from cracks and other inaccessible places. No other commonly used disinfectant has the power to cut through the remaining filth and dirt like Lewis' Lye. This combination of cleaning and disinfection is what makes Lewis' Lye so valuable for poultry sanitation.

Odorless

Eggs readily absorb strong odors; poultry are irritated by them. The strong "medical" smell associated with many disinfectants is avoided when Lewis' Lye is used as it has no odor whatsoever and removes foreign odors when it reaches their source.

Economical

As described on page 5, tests show Lewis' Lye to be less than 1/25th as costly to use as carbolic acid in killing B.W.D. germs in presence of chicken manure at 45° F. As poultrymen must practice economy to show a profit, this saving is well worthwhile. The low cost of Lewis' Lye solution—only 1c per gallon—permits frequent sanitation—all year around.

How to Prepare Solution

Dissolve 1 can of Lewis' Lye in 10 gallons of water. For smaller quantities, dissolve 2 rounded tablespoons in each gallon of water. When desiring to kill worm eggs, use hot water. Any handy container (except aluminum) may be used; rinse container after using.

How to Apply

First scrape out all litter, filth, dirt and other material with a shovel or hoe. Dispose of this where it will not be reached by poultry. *Next,* sweep out all straw, dust, etc. *Then,* scrub all surfaces within reach of poultry with the Lewis' Lye solutions, using an old broom or brush. Use the solution freely—it costs only 1c per gallon. If you have a hand or power sprayer, follow the scrub-

bing with a spray of Lewis' Lye solution, being particularly careful to force it into cracks, corners and other inaccessible places, as no disinfectant can kill germs or worm eggs unless it comes in contact with them. Spray walls and ceilings also.

To prolong the life of the brooms, buckets, sprayers, etc., rinse thoroughly with fresh water after using. Wear old clothes and rubbers. Do not be alarmed if a little Lewis' Lye solution gets on your skin, but rinse it immediately with plenty of fresh water to prevent irritation. If your skin is unusually sensitive, rubber gloves will protect your hands.

Chicks and other poultry may be admitted to premises without harm 1 hour after disinfecting with Lewis' Lye.

Don't try to save money and time by "cutting corners" on sanitation. One outbreak of disease or parasites will more than wipe out your saving. Once or twice a year is not often enough. Remember, Lewis' Lye solution costs only 1c per gallon, so the expense is no excuse for not practising sanitation regularly throughout the year. *Sanitation pays.*

Special Directions

1. ***Laying Houses.*** Clean and disinfect as often as is practical—once a month is not too often. This keeps the house free from objectionable odors and helps prevent disease and parasites. Apply Lewis' Lye solution as described on page 15.

2. ***Brooder Houses.*** Chicks are very susceptible to disease and must be protected against disastrous death losses. Never put chicks into a brooder house that has not been thoroughly cleaned and disinfected (see page 15). Clean and disinfect the brooder and other equipment with the same Lewis' Lye solution. Rinse metal surfaces with fresh, clean water after standing a few minutes. Allow to dry before putting in chicks. Purdue Extension Bulletin No. 173 (1933) recommends changing litter and cleaning and disinfecting brooder houses at least once a week while in use . . . twice a week if coccidiosis is suspected.

3. ***Battery Brooder Rooms.*** Treat the same as recommended for brooder houses.

4. ***Range Shelters.*** These should be placed on ground not used for chickens the previous year. Clean and disinfect regularly to protect the pullets and adult birds. Move frequently to clean ground free from droppings.

Lewis' Lye cuts through dirt and filth to disinfect cracks and corners.

5. ***Dropping Boards.*** Dropping boards are a source of disagreeable odor and an ideal haven for disease germs and parasites unless cleaned and disinfected frequently. Remove droppings, scrape, then scrub vigorously with Lewis' Lye solution. Then rinse with Lewis' Lye solution. This will remove odors and disinfect and destroy roundworm eggs. This should be done at least twice a week.

6. ***Dropping Pits.*** Many modern poultry houses now have dropping pits instead of boards. The same principles of cleanliness and disinfection apply. Use Lewis' Lye solution freely.

7. ***Feeders and Fountains.*** Scrape, then scrub and rinse these with Lewis' Lye solution. Let stand a few minutes, then rinse with fresh, clear water. Do this once or twice a week to help protect your birds.

8. ***Turkey Quarters.*** Recommendations for the care of houses and equipment of chickens also apply to turkeys. In fact, these disease-susceptible birds require even *more frequent* sanitation if they are to be kept alive and profitable.

9. ***Poultry yards and runways.*** Where possible, poultry and their houses should be moved to ground not used for chickens the previous year. Where permanent yards or runways must be used, plow the ground deeply. Where this is not possible, replace the top soil of runways with fresh soil not used for poultry the previous season.

CLEANING DIRTY EGGS

Under average farm conditions about ¼ of all eggs laid are dirty or slightly dirty. Even under best farm management some eggs become soiled. Consumers prefer clean eggs and pay several cents more per dozen than for dirty eggs. In some markets the wholesale price for dirty eggs is from 4c to 7c per dozen lower than the clean egg price. About 50,000 cars of dirty eggs are produced every year. The poultry industry loses several millions of dollars annually from marketing dirty or improperly cleaned eggs.

Tests by E. M. Funk, University of Missouri Experiment Station (reported in their Bulletin 394—1938) indicated that eggs, easily cleaned with 1% lye solution, kept equally as well

Remove lye "guesswork"—insist on Lewis' Lye.

in cold storage as unwashed clean eggs and sold for as high a price when marketed. Experienced egg candlers were unable to distinguish between lye-cleaned and unwashed clean eggs. Edible qualities were equally as good. Frozen eggs cleaned with lye before breaking had significantly lower bacteria counts than unwashed eggs or eggs washed with water before breaking.

Lewis' Lye is particularly effective for cleaning eggs. It is extremely high test . . . a powerful cleaner and bactericide . . . is absolutely odorless.

How to Clean

First prepare a 1% Lewis' Lye solution by dissolving 2 rounded tablespoons of Lewis' Lye in 1 gallon of water. For larger quantities dissolve 1 can of Lewis' Lye in 10 gallons of water. One gallon of solution is sufficient to clean ½ case of eggs. If the solution becomes very dirty, make up a clean solution. Prepare a fresh solution each time you wash eggs—do not keep it over from day to day. Use any convenient, shallow container (except aluminum). Rinse container with fresh water after using.

Rub each dirty egg with the Lewis' Lye solution until clean, then set in a wire basket or on a flat surface for draining. The use of rubber gloves is recommended. Do not get the solution on the clothing or on painted or varnished surfaces.

Increased Egg Profits

One cents worth of Lewis' Lye will wash ½ case of eggs at less than 1/10th cent per dozen. A few minutes time might bring you an extra profit of several cents a dozen, in higher prices, and give you clean eggs of which you will be proud.

Cleaning eggs with Lewis' Lye is easy, inexpensive, profitable.

DAIRY USES FOR LEWIS' LYE

Experiment Station bulletins, agricultural authorities and dairy papers are recommending lye more each year for dairy barns, milk houses and milking machines. Dairymen are turning to Lewis' Lye in increasing numbers because they find it offers an unusual combination of cleaning and disinfecting features of particular value to dairy farming.

Butterfat—the barrier for other disinfectants—is quickly turned into easily-rinsed soap by Lewis' Lye. Lewis' Lye cleans as it disinfects and is able to penetrate into cracks and corners. Lewis' Lye solution costs only 1½c per gallon. It can be used *freely* and *often* at very little expense.

Cuts Butterfat

Milk, cream, butter and cheese absorb odors quickly, taking on "off-flavors"—the enemy of bigger milk and cream checks and higher butter and cheese prices. Dairymen who have avoided "medical smelling" disinfectants for this reason, welcome the fact that Lewis' Lye has no odor and destroys foreign odors when it reaches their source.

Odorless

The effectiveness of Lewis' Lye for killing the organism of Bovine Abortion (Bangs Disease) is described on page 5. After tests using Lewis' Lye, the University of Wisconsin Bulletin 421 states "It was found that a 1-150 solution in either hot or cold water acted as an efficient disinfectant when applied liberally to the floors, stanchions and walls of stables. A solution of this strength is easily prepared by dissolving one 13 oz. can of lye in 15 gallons of water. Surfaces heavily coated with foreign material of any kind must be scraped and then thoroughly scrubbed with the lye solution. A coarse spray from either a hand or power sprayer gave satisfactory results when thus applied."

A Powerful Disinfectant

A regular sanitation program aids in preventing the spread of many dairy cattle diseases by contaminated surroundings. A few dimes spent for sanitation may save hundreds of

dollars. Once disease strikes a dairy herd it is advisable to consult a competent authority at once for curative measures.

Mastitis

Mastitis (also known as caked bag, or garget) is hard to detect and highly infectious. It is feared by dairymen because it may strike unexpectedly at any herd, tainting milk, throwing cows out of production and even rendering them permanently useless for milking. Washington State College tests, published in *American Journal of Veterinary Research, Volume 1, No. 1, October, 1940,* show that a 1:300 lye solution kills Mastitis Streptococci organisms in 5 minutes. To help protect your herd against infection by contaminated surroundings and equipment, by cleaning and then disinfecting barn floors, stalls and milking machines with Lewis' Lye solution. (See below and page 22.)

Dairy Barns

Dairy cattle are extremely valuable. The importance of having a clean barn and preventing contaminated surroundings from spreading disease far outweighs all the Lewis' Lye you would require for a year's sanitation program. It pays to play safe by disinfecting maternity stalls, by cleaning and disinfecting the entire dairy barn several times a year. Scrape out all caked fecal matter and other foreign material, then scrub all surfaces with a solution of 1 can of Lewis' Lye in 10 gallons of water. Follow up with a spray of the same solution, forcing the spray into cracks and other inaccessible places. Rinse painted surfaces with clear water. Do not use wire brushes, as stray wires might be picked up by the animals. Rinse containers, sprayer, brooms and brushes after using. Animals may be admitted to the premises 1 hour after treatment. Don't stint on the Lewis' Lye solution, it costs only 1c per gallon.

Other Hints on Sanitation

Buy only cattle tested for contagious abortion and tuberculosis. Isolate new additions to your herd until you are sure they are not infected with any disease. If you suspect contagious abortion or other disease in your herd, isolate the animals at once and consult your milk inspector, veterinarian or Dept. of Veterinary Medicine at your agricultural college.

Feed Troughs

Clean and disinfect feed troughs, water tanks and similar equipment once or twice a week by scrubbing with a solution of 2 rounded tablespoons of Lewis' Lye to a gallon of water. Allow to stand a few minutes, then rinse with clear water.

These are kept sweet-smelling and sanitary by flushing every few days with a bucket of hot water in which has been dissolved 5 rounded tablespoons of Lewis' Lye.

Gutters, Drains, Sinkpipes

Milkhouses

University of Wisconsin Bulletin 256 (1933) states, "For use in the milkhouse, nothing is as good as lye." Lewis' Lye cleans quickly and kills many bacteria. It destroys the smell of spoiled milk and other objectionable odors when it reaches their source. It has no odor of its own to taint dairy products. Lewis' Lye does not injure concrete. When used on painted surfaces, rinse with clear water after a few minutes. To prepare solution, dissolve 2 rounded tablespoons of Lewis' Lye in each gallon of water.

Care of Silos

Before refilling silos, clean and disinfect by scrubbing and spraying the inside with a solution of 1 can of Lewis' Lye in 10 gallons of water. This solution is odorless and the silage placed into the silo will not be harmed by it.

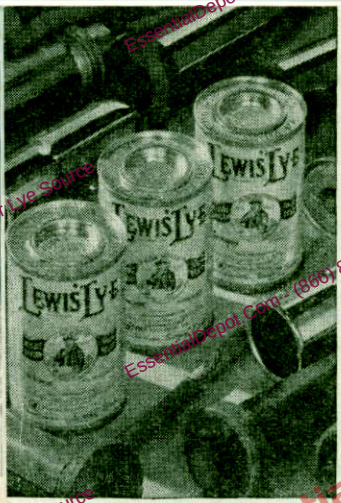
Dehorning Calves

Cattle with horns are a constant menace to the dairy herd. Their growth may be prevented easily and humanely with Lewis' Lye, and a better shaped head results. When the calf is 3 to 5 days old clip the hair from around the horn buttons and apply vaseline to the hide, being careful not to get any on the button. Add ½ can of Lewis' Lye to a cup of water; heat gently, stirring well. Fasten a piece of cotton or rag to a small stick and apply a little of this solution to each horn button, allowing to dry before applying again. Make 3 or 4 applications.

Hot Water from Gas Engines

Everytime you use your water-cooled gas engine, you heat water; this hot water may be used for flushing separators, milking machines and milk utensils, *provided* the water jacket is cleaned occasionally with Lewis' Lye. About once a month, before starting the engine, drain and refill the water jacket with a solution of ¼ can of Lewis' Lye to each bucket (2½ gallons) of water. After the engine has been used once, drain the solution, rinse the jacket and refill with clear water.

Lewis' Lye, the disinfectant that cuts through butter fat easily and quickly.



MILKING MACHINES AND UTENSILS

Milking machines have been widely adopted because they permit the progressive dairyman to produce finer flavored milk of low bacteria count . . . at lower cost. To do so however, he must follow a regular method of cleaning and disinfecting his milking machines . . . and this method must be quick and economical.

The rubber inflations and tubes are particularly difficult to keep sanitary as butter fat adhering to the inside surfaces cannot be removed efficiently by water or ordinary cleansers; and in addition to offering a breeding place for bacteria, butterfat causes rubber to deteriorate rapidly.

Lewis' Lye is very effective for cleaning and disinfecting milking machine rubber because it: 1. cuts butterfat quickly; 2. is an effective bactericide; 3. is a powerful cleanser; 4. is odorless, and destroys odors when it reaches their source; 5. is easy to use; 6. costs less than ½c per gallon of solution. No other cleaner or bactericide can offer these all-around advantages in one product.

The use of lye for milking machines is recommended by Experiment Station bulletins and authorities.

Two Ways to Prepare Solution

1. ***Stock Solution Method.*** Dissolve 1 can of Lewis' Lye in 1 gallon of water, contained in an open crock or any metal container except aluminum. Do not dissolve lye in a jug or glass bottle. When thoroughly dissolved, pour into a large bottle and keep tightly stoppered. Paste the Lewis' Lye label on the bottle for safety. When ready to use, add about 6 oz. (about ⅓ pint) of *stock* solution to each gallon of water to obtain the *working* solution.

2. ***Direct Method.*** Some prefer to prepare a *working* solution each time they disinfect milking machines, by dissolving 1 level tablespoon (½ oz.) of Lewis' Lye in each gallon of water.

How to Clean and Disinfect

Follow these directions each time, immediately after using the machine.

1. Draw 1½ gallons of cold clean water through *each* unit while the power is still on, dousing teat cups up and down in the water.

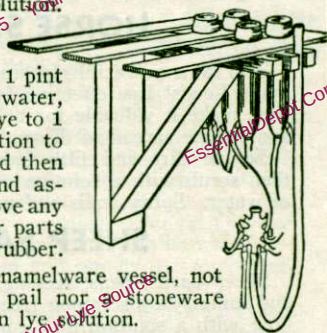
2. If the machine *does not* contain aluminum parts, draw 2 gallons of the Lewis' Lye *working* solution through each unit. If it *does* contain aluminum, use 1 oz. of B-K Washing Powder in 3 gallons of water for each unit.

3. With solution remaining in pail, wash pail and head of the machine with a brush. Drain and place on rack to dry.

4. ***Soak Method.*** Place the teat cups and tubes in a crock containing the Lewis' Lye *working* solution, making sure there are no air pockets in the tubes. Just before milking remove units, allowing solution to drain back into crock. Then attach unit to pail and draw through fresh water or B-K solution according to manufacturer's directions. Change Lewis' Lye *working solution* in crock once a week or oftener depending on condition of solution.

Rack Method. Place cups and tube in rack similar to one shown below, insuring that end of tube and teat cups are at same height. Fill with Lewis' Lye *working* solution. Allow this solution to remain in unit until next milking. Just before use drain out solution onto floor and attach units to pail and draw through fresh water or B-K solution according to manufacturer's directions. The rack method is the one preferred.

5. Periodically, as needed, disassemble machine and brush parts with a warm cleansing solution.



6. At least once a month, place all rubber parts in a Lewis' Lye solution prepared by adding 1 pint of *stock* solution to 1 gallon of water, or by adding 2½ oz. of Lewis' Lye to 1 gallon of water. Bring this solution to a boil, allow to cool, remove and then rinse thoroughly with water and assemble. This treatment will remove any butter fat adhering to the rubber parts and will increase the life of the rubber.

Caution: Use an iron or an enamelware vessel, not a galvanized, tin or aluminum pail nor a stoneware crock for boiling rubber parts in lye solution.

Lewis' Lye *working* solution costs less than ½c a gallon, so prepare fresh solution each milking. Do not waste old solution . . . use it to keep drains free-flowing and sanitary, to clean and deodorize milk-house and barn floors, gutters, etc.

Dairy Utensils

Milk and cream cans, pails, strainers, pans, bottles, crocks, churns, separator parts, etc., are kept sweet and sanitary by washing with a solution of 2 level tablespoons of Lewis' Lye in each gallon of warm water. Rancidity and sourness disappear and your milk containers come out clean and bright with a little rubbing.

Milkstone

Milkstone prevents rapid cleaning and harbors bacteria. To remove it, fill the con-

tainer to be cleaned with boiling water and add 1 heaping tablespoon of Lewis' Lye for each gallon. Where possible, set on a hot stove. Allow to stand 15 to 20 minutes; then pour out. Remove softened milkstone with a stiff brush or steel wool. Scrub thoroughly with washing powder and rinse. Do not treat aluminum containers; do not permit the solution to remain too long in tinned containers.

DISINFECTING INSTRUMENTS

Instruments used in the treatment and care of livestock, such as dehorning tools, vaccination instruments, blood sample needles and syringes, instruments for castration or for slitting ears, nose tongs for restraining animals, etc., are dangerous sources of infection, unless properly cleaned and disinfected before use. Knives and other tools used for butchering also should be cleaned and disinfected to help avoid contamination and spoilage of meat.

Instruments may be cleaned and disinfected easily and inexpensively by immersing 15 minutes or longer in a solution made by dissolving 4 rounded tablespoons of Lewis' Lye in each gallon of water. Prepare a fresh solution each day. Rubber gloves will protect your hands.

HORSE SANITATION

The same powerful cleaning and disinfecting properties that make Lewis' Lye effective for cattle, hog and poultry sanitation, make it invaluable for helping to protect horses and *mules* against the spread of disease by contaminated surroundings.

Scrape dirt and filth from stalls, stables, mangers, etc.; then scrub with a solution of 1 can of Lewis' Lye to 10 gallons of water. Spray walls and mangers with the same solution.

SHEEP SANITATION

Sheep barns, pens, feeding troughs, etc., can be kept clean and sanitary by scraping free of dirt and filth and then scrubbing with a solution of 1 can of Lewis' Lye in 10 gallons of water. Lewis' Lye is low in cost and does a thorough job because it is a powerful cleaner as well as a disinfectant. Treat *goat* premises and equipment in the same way.

SHEEP DIP

Dissolve 2 oz. of Lewis' Lye in 1 pint of water and slowly add 5 oz. of white arsenic. Heat if necessary and when the arsenic is dissolved, add 3 oz. of soda ash or washing soda, 6 oz. of rosin soap and 4 oz. of sulphur. Boil, strain and dilute the liquid with water to make 14 gallons of dip.

The flake form of Lewis' Lye pours freely.

CARE OF DOGS

Dogs confined in kennels must be protected against the spread of diseases and parasites by contaminated premises and objects. It is also necessary to protect dogs from other dogs that may show symptoms of disease.

A solution of 1 can of Lewis' Lye in 10 gallons of hot water will kill roundworm eggs, flea larvae, distemper virus, and many other disease germs with which it comes in contact. Help protect your dogs by scrubbing the kennel and dishes with the above Lewis' Lye solution. Then spray, sprinkle or rinse with same solution.

Isolate new dogs at least a week before placing with the others.

Sarcoptic Mange Dip

For many years dog experts have used a combination of lye and sulphur, known as Gleason's Dip, for treating sarcoptic mange. Prepare an effective dip with Lewis' Lye as follows:

Bring 8 or 10 gallons of soft water to a boil; then add 1 can of Lewis' Lye and 5 lbs. flowers of sulphur. Boil gently for 1 full hour, stirring steadily to prevent the sulphur from sticking to the container and scorching. Pour the mixture into a 50 gallon barrel or any suitable rust-proof container. Chip up 4 bars of soap, dissolving in a bucket of hot water. Pour into the container and add about 30 gallons of soft water. After cooling, dip is ready for use.

Grasp both hind feet of the dog with the left hand, passing the right hand under the body and seizing the left foreleg. Lower the dog gently into the barrel hind quarter first, then slip the left hand up and grasp front legs and with right hand under muzzle immerse dip to the root of the ears, being careful not to get solution in eyes or ears. This dip will be found to have excellent healing properties in cuts or sores on the hands of the user.

Dip dogs every week or 10 days until the sarcoptic mange condition is cleared up. For severe cases, dip twice a week at first.

Don't accept just "any lye"—demand Lewis'!

SOAPMAKING

Pure homemade soap is a wonderful product. It is made with lye and fat or grease, which unite to make a neutral soap. Pure soap is an excellent cleanser and *contains natural glycerin* which is soothing to the skin. When correctly made, homemade soap is hard, white and smooth. Homemade soap is much superior to many commercial soaps because the glycerin in homemade soap has not been extracted and no weight-making fillers have been added.

The quality of homemade soap, as with cooking, depends on the ingredients used and the care of preparation. Naturally, good soap cannot be made from dirty, rancid fats. Nor can good results be expected from inferior or impure lye, because lye is extremely important in soapmaking.

Lewis' Lye has been known as the Prize Soapmaker for three generations. Lewis' Lye is high quality and dependable. Take no chances with substitutes.

There's a difference in lye—demand Lewis' Lye!

This illustration shows 9 lbs. of all-purpose toilet and laundry soap made with only one 10c can of Lewis' Lye.

Easy as Making a Cake

There is nothing difficult or tiresome about making a batch of soap the Lewis' Lye way. Six pounds of waste cooking grease and fat from meat scraps, a can of Lewis' Lye, and a few minutes' time will make nine pounds of fine all-purpose soap *at a cost of less than one cent per LARGE* bar. A thrifty housewife can save many dollars a year on her soap bill by making fine soap with Lewis' Lye. This saving will pay for extra gasoline, clothing, entertainment or other luxuries. Why not make this easy saving?

Fats or Grease to Use

You must have fat or grease to make soap; it cannot be made from lean meat scraps. Tallow and lard make the best soap. Fats that have no cooking value, such as meat fryings, cracklings, meat trimmings and other refuse fat can be used. Certain vegetable oils are sometimes used. Mineral oil or mineral grease will not make soap.

Preparing Fat

Good soap requires fats that are free from dirt, rancidity, lean meat, salt and other impurities. Fats may be grouped in three classes:

CLASS 1—Fat rendered from tallows, meat trimmings, rinds and other meat scraps. This fat is ready for soap.

CLASS 2—Meat frying and other refuse fats. This class of fat should be washed as follows: Add an equal amount of water and bring it to the boiling point. Remove from fire, stir, add cold water (1 qt. to 1 gal. of the hot liquid). The cold water precipitates foreign substances. The clean fat comes to the top. Remove the fat when firm.

> *NOTE: Some fats require a second washing. Wash a very rancid fat at least twice.*

CLASS 3—Cracklings. For *Pressed Cracklings,* remove fat as follows:

1. To every four pounds or one gallon of Pressed Cracklings add one level tablespoon of Lewis' Lye and water to twice the depth of the cracklings.
2. Cover and boil one hour.
3. Remove from fire and when it stops boiling pour cold water over it and proceed as in Class 2.

Treat *Unpressed Cracklings* the same as Pressed Cracklings, except use one level teaspoon of Lewis' Lye instead of one tablespoon, to four pounds of cracklings.

NOTE: Sixteen pounds of cracklings (approximately four gallons) can be boiled at one time. Remove fat from the cracklings after butchering and store until ready to make soap.

Easy Lewis' Lye Recipe

To make 9 pounds of pure, hard, smooth soap suitable for toilet, laundry or soap flakes, follow this simple recipe:

1 can Lewis' Lye
3½ pints cold water
6 pounds clean fat (tallow or lard or some combination of tallow and lard)

(Six pounds of fat is about 6¾ pints or 13½ standard measuring cups of liquid fat.)

Dissolve Lewis' Lye in water (never use an aluminum container). Stir until dissolved and let cool to correct temperature. (See temperature chart below). Melt fat to clear liquid and let cool gradually to correct temperature (see chart) or until the fat offers resistance to the spoon. Stir from time to time to prevent the crystals of fat reforming. Pour the Lewis' Lye solution into the fat in a *thin, steady, stream with slow, even stirring.* (Rapid addition of lye solution or hard stirring is liable to cause a separation). A honey-like texture is formed which in about 10 or 20 minutes becomes thick with all the lye incorporated into the fat. Pour this mixture into a wooden box that has been soaked in water and lined with clean cotton cloth dipped in water and wrung nearly dry. Place in a protecting pan. Cover with a board or cardboard then with a rug or blanket to retain the heat while it is texturing out. Let it remain undisturbed for 24 hours—then cut and lift from mold.

To remove the soap from the mold, lift it by the ends of the overhanging cotton lining. Cut into bars by wrapping the soap once with a fine wire or string, crossing ends and pulling. Place soap so air can reach it, but avoid drafts and cold. Soap protected from drafts and cold lathers better. In 10 to 14 days it is ready for use. Aging improves soap. *Note: Do not let soap freeze during the first two weeks.*

Temperature Chart

Correct temperatures are extremely important for making the finest soap. Follow these temperatures closely. Use a dairy or floating thermometer.

Type of Fat	Temperature of Fat	Temperature of Lye Solution
Soft rancid fat	95° F. to 100° F.	75° F. to 80° F.
Sweet lard or other soft fats	80° F. to 85° F.	70° F. to 75° F.
Half lard and half tallow	100° F. to 110° F.	80° F. to 85° F.
All tallow	120° F. to 130° F.	90° F. to 95° F.

In hot weather or in a hot room if the soap mixture remains greasy, set it in a pan of cold water and continue stirring until thick, when it is ready to pour. If temperatures are too low, lumps of soap will form and separation will occur. In that case, set the mixture in a pan of warm water and stir gently until it is of the right consistency, and all the lye is re-incorporated. *NOTE:* Avoid hardening of the mixture on the sides and *bottom of the pan.*

Separation

If too cold or too hot a temperature is used, or soap is too vigorously or not thoroughly

mixed, a separation may occur. A separation may also result from using exceedingly rancid fat, or fat containing salt. Greasy soap forms at the top while liquid settles at the bottom. When separation occurs, reclaim as below:

Reclaiming o… Boiling Soa…

Cut or shave the soap into a kettle, add the lye that has separated out (never throw it away) and about five pints of water. Melt with gentle heat and occasional stirring. Then raise the heat and boil gently. It should become thick and syrupy. If it does not, add more water, one pint at a time, and continue boiling until it becomes ropy and hairy when dropped from the spoon. Pour into mold and cover.

NOTE: Do not be afraid of adding too much water because it can be boiled off.

VARIATIONS IN SOAPMAKING

In addition to pure all-purpose soap, many other kinds of attractive and useful soap can be made in the home. The thrifty housewife may eliminate all soap and cleanser purchases and yet enjoy all the luxury and efficiency of dozens of types of soap.

Floating Soa…

Almost any type of soap can be made to float. When the soap mixture is thick enough, fold air into it as egg white would be folded into a cake mixture.

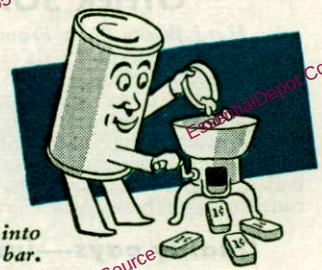
Perfumed o… Colored Soap

If perfumed soap is desired, the following oils are recommended, preferably the synthetic or imitation: Sassafras (4 tsp.); Lavender (2 tsp.); Citronella (2 tsp.); Lemon (1 tsp.); Cloves (1 tsp.); Almond (1 tsp.); Rose Geranium (½ tsp.).

Your druggist can supply or secure coloring ingredients for you. Never use perfumes or colors containing alcohol; they will fade and may cause separation.

A tea made with leaves of rose geranium gives a delightful perfume, and may be colored or not as you like by adding the extract of blossoms of pink roses or tulips. A green color can be had by pounding the tops of beets to extract a few drops of the juice — and add in the water.

All soap readily absorbs odors. It can be inexpensively perfumed by placing with it the leaves of a favorite flower or other perfume, if perfume has not been added previously to



Lewis' Lye turns waste grease into smooth, hard soap at 1c per bar.

the mixture. By supplying the perfume and coloring from the home garden, luxurious toilet soaps can be made at very low cost, saving several more dollars in the family budget.

Borax Borax quickens the sudsing action of soap. Two tablespoons dissolved in the Lewis' Lye solution (for each can of lye) while cooling, is sufficient.

Soap Flakes, Chips, Powder It is an easy matter to make fine soap flakes and chips with Lewis' Lye soap. Rub three-day old soap over a soap chipper or vegetable shredder. Stir occasionally while drying. To make powder, first flake or chip the soap and dry in warm oven (150° F.). When thoroughly dry, pulverize it. Soap containing borax makes quick sudsing powder.

HOMEMADE SOAP MADE THE MODERN WAY SHOULD SATISFY THE MOST FASTIDIOUS.

HOW SOAPMAKING PAYS

A Home Management Extension Economist has estimated the money saved by home soapmaking as follows: She purchased 4 brands of laundry soap and found them to average 9 oz. in weight and 6c in cost, per bar. At an estimated use of 2 bars of laundry soap a week, a year's supply would weigh 58½ lbs. and cost $6.24 at the store. As one 10c can of Lewis' Lye will make 9 lbs. of soap, 6½ cans costing 65c plus left-over or waste grease will make 58½ lbs. of soap . . . giving a saving of $5.59 per year saving on laundry soap.

The toilet soap saving is even larger. Seven brands averaged 3½ oz. at a cost of 8c per bar. Based on 2 bars per week, a year's supply would weigh 22¾ lbs. and cost $8.32 at the store. This amount of toilet soap can be made at home with Lewis' Lye for approximately 35c including perfume and coloring. The toilet soap saving would be $7.97. The combined laundry and toilet soap saving would be $13.56. Think of the many things you could buy with this money saved by using your waste grease and a little extra time and effort!

OTHER SOAP RECIPES

1. ***Hard White Soap From Cracklings.*** Combine 2 gallons water and 3 cans of Lewis' Lye. Allow to cool an hour or more. Place on stove and add 15 pounds of fat scraps. Allow to boil until every scrap is dissolved. Add a total of 2 gallons more water, adding only enough at once to keep the product from boiling over. Set to cool until next day. Skim solid substance from the surface. Place it in clean kettle and boil 2 hours. Add boiling water until soap becomes the consistency of honey when dropped from a stirring stick. If

too much water is added, boiling will need to be prolonged. Pour into molds. Cover while cooling.

2. ***Rosin Soap.*** Rosin added to soap increases its lathering properties but makes a darker and softer soap. It is frequently used as laundry soap. Add 8 ounces of crushed rosin to 5½ pounds of clean fat and raise the temperature until the rosin is melted or dissolved in the fat. Cool the mixture to 100° F. and add the lye solution made by dissolving 1 can of Lewis' Lye in 2½ pints of water and cooling to 90° F. If soap containing more rosin is desired, for every 8 ounces of rosin added decrease the amount of fat used by 8 ounces. The total weight of rosin and fat should be 6 pounds for each can of Lye.

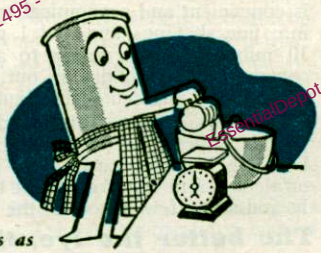
3. ***Hard Soap by the Boiling Process.*** Prepare as shown on page 28 but do not pour into molds. Keep covered and set in a warm place over night. Next day cut into fine shavings, add 7 pints of water and melt with gentle heat and occasional stirring. When all lumps are dissolved, raise the heat and continue boiling until of a syrupy nature when dropped off of the spoon or paddle. Then pour into molds. Boiling Process Soaps require more aging than Cold Process Soaps. Perfumes, colors and other special materials are added after the soap has cooled somewhat, but while it is still fluid enough for pouring.

4. ***All Tallow Soap.*** One can of Lewis' Lye; mutton or beef tallow 6 pounds; water 2¾ pints; lye solution 90° F.; fat 130° F. All-tallow soap is often referred to as "saddle soap" because it is valuable as a cleaner and preserver of leather. Substitution of 1 lb. of tallow with lard, cocoanut or olive oil will improve the lathering properties.

5. ***Cocoanut Oil Soap.*** One can of Lewis' Lye; cocoanut oil 4½ pounds; water 2½ pints; lye solution 70° F.; oil 110° F. This soap gives a very profuse but thin lather. Substitute tallow or lard for part of this oil for thicker lather.

6. ***Glycerine Soap.*** To make Glycerine soap add about 6 ounces of Glycerine to any soap shortly after the lye solution has been added.

7. ***Imitation Castile Soap.*** A very high grade soap which in many respects is superior to Castile Soap can be made as follows: Olive oil 24 ounces; tallow (good grade) 38 ounces; cocoanut oil 24 ounces; fats 90° F.; 1 can of Lewis' Lye; water 2 pints. Cooled to 90° F.



Making soap with Lewis' Lye is as easy as making a cake.

8. ***Cottonseed Oil Soap.*** One can of Lewis' Lye; cottonseed oil 5¾ pounds; water 3 pints; lye solution 135° F.; oil 135° F. This oil is a little more difficult to saponify and lye should be added in small portions at a time, obtaining complete saponification before the further addition of lye. The resulting product will be a rather soft soap. For harder soap substitute part of the cottonseed oil with tallow. (See "Liquid Soap.")

9. ***Fish Oil Soap.*** One can of Lewis' Lye; fish oil 4½ pounds; water 3 pints; lye solution 80° F.; oil 100° F. Stir well for about 10 minutes and then allow to stand with occasional stirring until combination is complete, then transfer to the molds. This soap is used as a basis for sprays for use as insecticides and fungicides.

10. ***Linseed Oil Soap.*** One can of Lewis' Lye; linseed oil 5¾ pounds; water 4 pints; lye solution 90° F.; oil 100° F. Add lye solution in small quantities at a time and get good combination before further addition. This makes a soft soap. Recommended for washing automobiles and furniture.

11. ***Tar Soap.*** A lard or tallow soap is made up in the regular manner and allowed to stand with occasional stirring until it has become quite thick. Eight ounces of wood tar is then added and worked in. Stir and beat the mass thoroughly to prevent small lumps from forming.

12. ***Lewis' Abrasive Soap.*** Follow recipe for making soap; page 28. When mixture thickens add, gradually, 5 to 6 lbs. of pumice stone, emery dust or Tripoli powder and stir until the mixture is thoroughly blended or all the lye incorporated. Pour into mold and cover. Yield: 14 to 15 lbs.

13. ***Lewis' Abrasive Soap Paste.*** A fine soap for household scouring and for mechanics' hands. Shave 3 lbs. home-made soap and melt it in three pints of water. Add 3 ounces of light mineral oil. When this is thoroughly blended allow it to cool to a thick consistency and work in 5 lbs. of pumice stone or Tripoli powder. Keep tightly covered to prevent paste drying out. Yield: 11 lbs.

14. ***Jelly Soap.*** For use in washing machines and for washing dishes, Lewis' Lye hard soap converted into Jelly Soap is convenient and economical to use. Cut 1 pound of hard soap into fine shavings and add 1 gallon of water. Boil for about 10 minutes then transfer to a suitable vessel to cool. Keep covered to prevent drying out. Jelly Soap melts in hot water immediately and makes thick suds.

15. ***Liquid Soap.*** Cottonseed oil 4 pounds; cocoanut oil 1¼ pounds; glycerine 3 pints; alcohol 6½ pints; water seven pints. Dissolve 1 can of Lewis' Lye in a mixture of 3½ pints each of alcohol and water and heat to 125°F. Have the oils at 150° F. and add a few ounces of the lye solution, stirring slowly and

The better the lye, the better the soap—use Lewis'.

evenly. When saponification is about complete, add a few ounces of lye solution with continued stirring and repeat until all the lye solution is in. Cottonseed oil is sometimes rather hard to saponify, i.e., to make it unite with the lye, and slight separation of oil might occur after the above procedure if the lye has been added too rapidly. In this case, allow it to stand 24 to 48 hours with occasional stirring. When a perfect mixture is obtained with no separation of oil, add the glycerine and the remaining alcohol and water. Allow to stand for a couple of days and if any sediment settles out, filter or syphon off the clear liquid. Then color and perfume as desired.

NOTES ON SOAPMAKING

1. Never use lye on aluminum utensils (lye acts upon them). For small batches of soap, enameled or granite ware is suitable and for larger batches, an iron kettle may be used.

2. All grease should be pure and clean to obtain soap with a clean, wholesome odor.

3. Measure accurately. Be careful about temperatures.

4. Ammonia, kerosene, carbolic acid, etc., when added to soap help it little, if any, as the lye usually neutralizes them. They increase cost and may make soap harsh on skin.

5. Coldness makes a hard, brittle soap.

6. Excess lye makes a coarse, flinty soap that will crumble when shaved. Soap should have a smooth, velvety texture that curls when shaved. It should not bite the tongue when aged.

7. Use this all-purpose soap for toilet soap, a shampoo, for washing prints, lingerie, hose and other delicate fabrics.

8. The following fats (for soapmaking) are listed in the order of their desirability: Tallow, lard, and their combinations, olive oil, other vegetable oils. Mineral oils will not make soap.

9. Poultry fat should be combined with other fats, as soap made from it alone is soft and spongy.

10. Aging always improves soap. Soap made from lard or soap that has been boiled requires longer aging before it becomes hard and ready for use.

11. Instead of storing rinds and meats scraps, extract the fat; store in a tightly covered container in a cool, dry place.

12. Make the fat into soap as it accumulates and let the soap age rather than allow the fat to get too old and rancid.

13. There need never be a failure in soapmaking. If separation occurs, it can be reclaimed (see page 29).

14. Where you find your grease has become rancid or contains materials other than fats, boil in large quantity of water, allow to cool, skim off grease, and then follow the directions as shown on the Lewis' Lye can. Take no chances, but demand the famous Lewis' Lye.

LAUNDRY MADE EASY

Any woman who has toiled over a hot wash tub . . . trying to work up heavy suds with hard water . . . trying to rub out stubborn grease or dirt marks . . . any woman who has hung up a large washing, only to find the white things still a dingy gray . . . appreciates any extra help she can get. In desperation some women have turned to expensive water softeners, bleaches, costly soap chips and powders.

Many resourceful women, however, have learned from their mothers or from experience that the easy, inexpensive way to help build up soap suds, dissolve grease, loosen dirt, and whiten clothes is to add a little Lewis' Lye to the wash water. One woman, typical of thousands, writes "I would not start my wash without Lewis' Lye." If you are not satisfied with the way your washing is going, yet do not want to run up a big laundry supply bill at the store, try a little Lewis' Lye in your next wash.

Directions. In each bucket of water dissolve ½ teaspoon of Lewis' Lye. Rub soiled clothes with soap and soak over night.

Cleaning Working Clothes

Farmers', mechanics', miners', painters' overalls naturally need a little extra help in washing. These are easily cleaned by adding a little more Lewis' Lye than indicated above, the amount depending on the type and amount of soil. Experiment with your menfolks' working clothes until you find how little added Lewis' Lye will do the job . . . then add that amount every time you wash those clothes.

REMOVING PRINTING FROM BAGS

Thrifty housewives make aprons, dresses, dish towels, curtains and other useful articles from flour, feed and other cloth bags. When the printing is removed by Lewis' Lye, the white cloth may be dyed in deep, lasting colors. After removing your regular washing from the tub, soak the bags a few minutes in the wash water. Then, leaving just enough water to cover the bags, slowly add ½ teaspoon of Lewis' Lye, stirring to insure it dissolves instantly. Boil ½ hour, then rinse bags in fresh warm water and rub thoroughly with soap. The printing will disappear unless printed with a very resistant type of coloring. Such bags

Lewis' Lye is the hidden helper at the wash tub.

require a larger amount of Lewis' Lye added to the wash water. The amount of Lewis' Lye required for various brands of bags is soon determined.

SOFTENING WATER

Relatively few homes are blessed with plenty of real soft water. Every housewife knows soft water makes soap go twice as far, lightens all kinds of washing and scrubbing, does a better job of cleaning, and is gentler on the hands and face and in the bath and for shampooing the hair. Thousands of women have found that they can remove "temporary hardness" in water easily for about 1/15th cent per bucket with Lewis' Lye. Why put up with hard water if you can soften it this cheaply. Don't scrimp on soft water if your cistern is running low—use Lewis' Lye. If your rain water is discolored, switch to Lewis' Lye-softened water. This simple test will show the results Lewis' Lye will get from your local water.

How to Test

Water varies in type and amount of hardness. Place 5 gallons in a tub and add 1 level teaspoon of Lewis' Lye. Let stand over night. The precipitate or powder you see next morning floating on the water or settled to the bottom of tub is the "temporary hardness" removed by Lewis' Lye. If no precipitate appears your water contains "permanent hardness" which cannot be softened with lye.

Remove a small amount of the softened water and try to make a suds with your soap. If curds form, not all the hardness has been removed and more Lewis' Lye is required. After a few tests you will find the minimum amount of Lewis' Lye resulting in water that will not make curds when soap is added. Once this amount is determined for your local water, simply add that amount every time you soften water. When properly tested, and no excess lye added, the lye is neutralized by the hardness in the water, and the softened water will be as harmless to fine fabrics as rain water.

How to Soften

To every 5 gallons of water add the required amount of Lewis' Lye as determined by above test. *Cold water* requires 3 or 4 hours to soften, *hot water* (not boiling) only 5 or 10 minutes. Stirring hastens precipitation. If the precipitate floats to the top, skim it off; if it settles to the bottom, draw off the clear water.

Lewis' Lye softens water easily and at low cost.

HOUSEHOLD USES

The thrifty housewife has found that the intelligent use of Lewis' Lye will save yearly many dollars otherwise spent on expensive soaps, soap flakes and powders, cleansers, liquid bleaches and similar products. *Dimes* spent for Lewis' Lye will go as far as *dollars* spent for many other products.

Like a modern automobile, Lewis' Lye has great energy and can cover a great deal of ground—yet is tractable and harmless when guided by someone who knows how.

In the "boom days" following the World War some of us learned to spend money a bit too lavishly. We paid more for new things than for old reliable articles which would do the job just as well or better. So it was with household products. Many shrewd housewives are now returning to the time-proven friends. They are again cleaning their drains with Lewis' Lye at half the cost. Lewis' Lye is cutting their soap and cleanser bills in two. These and similar savings in the housewife's budget are adding up to many dollars yearly—which is being spent for articles previously gone without.

If Lewis' Lye does not have an important place in your household program it will pay you to try it for the many uses shown here and elsewhere in this booklet. Remember, Lewis' Lye costs only 10c a can, yet does much more work—often better—than many products costing a great deal more.

All cleaning is inclined to be hard on the hands. If your skin is sensitive, protect your hands with rubber gloves when doing heavy cleaning. Lewis' Lye does not injure rubber.

Scrubbing When scrubbing unpainted wood floors, shelves, cupboards, drain boards, tile and terrazzo floors, Lewis' Lye is a great help. It dissolves grease like nothing else can, and loosens dirt and grime. Lewis' Lye partly bleaches the bare wood, helping to give it a clean, lighter appearance. Dissolve 1 heaping tablespoon of Lewis' Lye in each bucket of water. If the grease stains are particularly bad, add a little more Lewis' Lye. Do not use this solution on painted or varnished surfaces.

Washbowls, Sinks, Bathtubs Dissolve 1 tablespoon of Lewis' Lye in a gallon of water and scrub or brush on the surface until it is clean and gleaming. Then flush down the drain and rinse the surface with clear water.

Washing Dishes The grease on dishes soon emulsifies in dishwater and causes streaks to appear on glassware and china. Because Lewis' Lye has the remarkable ability to convert grease into soap, it helps counteract grease in dishwashing, keeping up suds, keeping down grease smears. Add 1 level teaspoon of Lewis' Lye to a dishpan of hot water before adding soap.

Windows and Mirrors

Glass is inclined to streak when washed, unless expensive sprays or powders are used. Try adding 1 teaspoon of Lewis' Lye to each bucket of water when washing them. It will help eliminate those greasy streaks . . . enable you to get shining windows and mirrors at low cleaning cost.

Cooking Utensils

Metal pots, pans, kettles, roasters and frying pans often are not completely freed of grease and food odors by ordinary washing. Grease and odors may be removed entirely by filling utensils (not aluminum) with water and adding 1 teaspoon of Lewis' Lye for each quart. Boil a few minutes; then rinse with clear water.

Burned-in Utensils

The best cook occasionally has a cooking utensil scorch or stick. The worst food-scorched utensil can be cleaned by Lewis' Lye. Add enough water to cover the burnt portion in the utensil (not aluminum), and add 1 tablespoon of Lewis' Lye for each quart of water used. Boil several minutes and then let stand. Empty, scrape out the softened material and then wash in the usual manner.

Bottles, Crocks, Jars

Glass and glazed earthen ware are made clean and sweet and free from grease streaks by rinsing thoroughly with a solution of 1 tablespoon of Lewis' Lye in each quart of water used. Where sediment is caked in bottom, allow the solution to stand until the sediment is loosened. Drain out the solution and rinse with clear, hot water.

Refrigerators

As food—particularly dairy products and meat — absorbs odors, refrigerators — both electric and ice types—should be kept spotlessly clean. Lewis' Lye has the power to dissolve grease and remove odors when it reaches their source. Dissolve ½ teaspoon of Lewis' Lye in a gallon of hot water. Wash the inside surfaces thoroughly. For ice refrigerators, pour some of the solution down the drain. A sanitary refrigerator helps safeguard family health.

Gas Stove Burners

A yellow gas flame caused by clogged burners means wasted gas and improper heating. Burners (unless of aluminum) should be boiled in a solution of 2 tablespoons of Lewis' Lye in a gallon of water. This will remove accumulated carbon, boiled-over food and restore the money-saving clear blue flame.

Lewis' Lye Cleans and Disinfects Garbage Cans.

Cleaning Stoves Tops of wood, coal and other kinds of stoves accumulate black grease stains. Lewis' Lye removes these stains easily. Dissolve 1 tablespoon of Lewis' Lye in 2 quarts of water. Scrub with old brush. Rinse.

Oil Stove and Lamp Burners When these become fouled with soot or boiled-over food, their effectiveness is greatly reduced. Clean by boiling in a solution of 2 tablespoons of Lewis' Lye in a gallon of water.

Garbage Cans Garbage cans are a source of annoyance to careful housewives—particularly during hot weather when they are likely to give off objectionable odors and attract flies. Lewis' Lye cuts through the grease, grime and decayed matter to reach the source of odors, destroying them . . . . makes it easy to keep cans sanitary. Dissolve 2 tablespoons of Lewis' Lye in each gallon of water and scrub can and cover thoroughly. Let stand 10 minutes, then scrub again.

Toilet Bowls Why pay high prices for special bowl cleaners when Lewis' Lye will remove odors and stains in your toilet for a fraction of the cost. Slowly shake a tablespoon or two of Lewis' Lye into the bowl. Allow to dissolve; then rub the water over the entire interior with a long handled brush or swab; then flush.

Slop Jars Slop jars are kept sanitary and odorless by scrubbing with a solution of 2 tablespoons of Lewis' Lye to a gallon of water.

Musty Cellars Damp cellars are apt to get musty and develop odors if not properly sanitized. Dissolve 4 rounded tablespoons of Lewis' Lye in a bucket of water. Scrub this on cellar floors, stairs, shelves and walls using an old broom or brush. This solution is an excellent cleaner, will remove objectionable mustiness and odors when it reaches their source, and will destroy mildew or bacteria with which it comes in contact. This is an easy, inexpensive way to make your cellar clean and sanitary.

Cement and Brick Porches, Steps, Sidewalks These present rough surfaces and cracks that are not easy to keep clean, sanitary and stainless with ordinary soap and water. Add 4 rounded tablespoons of Lewis' Lye to a bucket of water. Scrub briskly with an old broom or brush. The solution will cut through grease and grime, remove mildew, penetrate the rough surfaces and cracks, and give the cement a fresh whitened appearance.

CLEANING DRAINS

You wouldn't think of allowing the porcelain surface of your sinks and bathtubs to remain covered with grease and dirt. As a good housekeeper, you keep them spotless and sanitary. It is just as important to keep the drain pipes clean and sanitary. Otherwise they become sluggish and a source of objectionable odors . . . and if you neglect them too long, you may have to spend several dollars for a plumber.

Drain sluggishness is caused by grease from the skin, dishes, etc., forming on the inside of the pipes. This grease gathers ill-smelling matter, as well as hair and lint, until the pipe opening gets smaller and smaller. As Lewis' Lye has the power to change grease into soap, it is an ideal drain cleaner. The soap quickly dissolves in the water in the drain and passes down the pipe. Lewis' Lye also eats up the hair and lint and destroys the odors of foreign materials in the pipes. Lewis' Lye has been cleaning drains efficiently and economically for 3 generations.

Many housewives have formed the regular Lewis' Lye habit, adding Lewis' Lye to all drains at least once a week. It only takes a minute and quickly becomes a part of their cleaning routine. The whole family appreciates quick-emptying, sanitary drains.

Cleans Drains at Half Cost

Lewis' Lye is odorless and does not cause choking gas. Costing only 10c for a large 13 oz. can, it cleans drains *at half cost.*

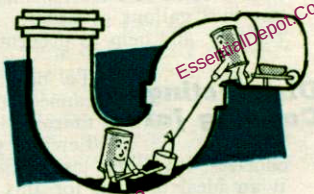
How to Use

Put 3 tablespoons of fast-working Lewis' Lye on the drain sieve and flush into the pipe with 1½ cups of hot water. Allow to remain 5 minutes, then flush with more water. Do this every cleaning day—at least once a week.

If you have waited until the drain has become extremely sluggish before using Lewis' Lye, it may be necessary to repeat the above treatment. In such cases the use of a plumber's plunger or large rubber cup will agitate the solution in the drain pipe, causing the stoppage to be removed more quickly.

Thawing Frozen Drains

When drain pipes become frozen remove as much water as possible from the top of the pipe and slowly shake in enough Lewis' Lye to make drain hot to the touch. As pipe cools add more Lewis' Lye until it is clear.



Lewis' Lye cleans drain pipes; Keeps them free-flowing and sanitary.

FOOD USES

Hominy

Hominy made in the home from locally produced corn is becoming increasingly popular. The more a family can live on home-produced food the more money it has for other things. Home made hominy can be served in several delicious ways and is a welcome addition to any meal. While any type of corn can be used, a good quality white dent corn with a broad kernel is best suited. Use either old or new corn, but old corn requires longer treatment in the Lewis' Lye solution to remove the hull.

To Prepare. Dissolve 1 can of Lewis' Lye in 6½ gallons of water; add 6 quarts of corn. Heat the water, keeping it just below the boiling point until the hulls have started to loosen. Remove the hulls and scum from the water, adding fresh water occasionally during the heating. Finally stir up the corn well and transfer to clean, cold water. Rub the corn, changing the water several times until the corn is thoroughly cleansed and free from hulls. Placing the corn with fresh water in a churn, if available, will permit the hulls to be removed easier than by hand rubbing. Finally soak the corn in cold water overnight. Then wash 3 or 4 times with hot water.

Removing Fruit Skins

Remove the skin of peaches, pears, plums and similar fruit the way professional canners do—use Lewis' Lye. You will find this a great improvement over hand-peeling, as it saves time, makes better looking canned fruit and saves much of the fruit otherwise thrown away with the peeling.

Directions. Dissolve 1 can of Lewis' Lye in 2 gallons of water (do not use aluminum container) and bring to a boil. Place the fruit in a wire basket (a thin cloth may be used) and lower into the hot lye solution for about 30 seconds. Remove and immediately immerse in cold water. The skins may now be washed or rubbed from the fruit. As green fruit may require more than 30 seconds and very ripe fruit less, try a small quantity of fruit first to determine just how long to dip that lot of fruit for best results.

After removing peelings, rinse fruit in clear water, then dip in a solution of 4 tablespoons of salt and 4 tablespoons of vinegar in 2 gallons of water. This will neutralize any lye, if it remains, and help to prevent the fruit from darkening.

Disinfecting Canning Jars

To help avoid mold or fermentation of canned foods, the jars or bottles must be thoroughly disinfected to destroy bacteria. Lewis' Lye is a powerful bactericide. It is odorless, leaves no taste, and is an excellent cleaner—making it an ideal product for this purpose. No boiling of jars or

bottles is necessary. Dissolve 4 tablespoons of Lewis' Lye to each gallon of water. Rinse jars thoroughly with the Lewis' Lye solution. Then rinse with clear scalding water.

Pretzels

Home-prepared pretzels offer a delicious, economical means of adding variety to the family menu. Make a dough of 4¼ lb. flour, 1 oz. fat, 2 teaspoons salt, ½ oz. yeast, using water for the liquid. Let dough stand 20 minutes, then form into pretzels or pretzel sticks. Let dry 30 seconds, then place in a solution of 2 level tablespoons of Lewis' Lye in a gallon of water which has been brought to a boil. Remove pretzels as soon as they float, sprinkle with coarse salt and bake in a 700° oven for 2½ minutes. Place in a drier for an hour.

Lutfisk

Soak the lutfisk in cold water for one week, changing the water every morning. For *each* 4 or 5 lbs. of lutfisk being prepared, measure out 1 teaspoon of Lewis' Lye and dissolve in just enough water to cover the fish well. Soak the fish in the Lewis' Lye solution 3 or 4 days. Remove the fish and soak it in clear water 3 or 4 days, changing the water each morning. Keep the fish in a cool place during the entire treatment.

To cook lutfisk, place in a cloth bag and set in a pan or kettle. Pour boiling water over it and continue boiling for 5 minutes, adding salt to taste. Remove and serve on a platter with brown melted butter or cream sauce.

MAKING PASTE

Professional bill posters and paper hangers know the value of Lewis' Lye for making excellent paste cheaply. Dissolve 1 teaspoon of Lewis' Lye in ½ pint of water. In another bowl or jar slowly sift 5 tablespoons of cornstarch or flour into 1 pint of water, stirring steadily to prevent lumps forming. Pour the Lewis' Lye solution into this mixture and stir until it thickens into a paste. Prepare larger quantities in the same proportion.

KILLING TREES

Trees may be killed quickly and easily as follows: Dissolve 2 cans of Lewis' Lye and 1 lb. of white arsenic in 1 gallon of water. Mix thoroughly and allow to stand a day or two. Cut a ring around the trunk by downward strokes of an ax. When the ax is withdrawn, a groove or trough is left. Pour the solution in this trough, distributing it equally all around the trunk. The solution is drawn into the root system, killing the tree in a day or two.

FUR FARM SANITATION

Every fur farmer knows the constant threat of disease and parasites, which are spread by contaminated surroundings, to his profits. As F. B. Hadley of the University of Wisconsin points out in an article in the August 1936 American Fur Breeder, "One part of lye to 150 parts of water has been found to be an effective and economical disinfectant for use on the fur farm. . . . Besides acting as a disinfectant, lye solution is capable of saponifying fats, of dissolving mucus and of penetrating caked fecal material, so is the best cleaning agent available for these purposes."

Scrape out dirt and filth from kennels and nest boxes; then scrub and spray them with a solution of 1 can of Lewis' Lye in 10 gallons of water. Scrub feeding and drinking containers with the same Lewis' Lye solution. Some fur farmers do not disinfect during the priming period to avoid injury to fur.

Rabbits The above directions for fur farm sanitation may be used to good advantage in the cleaning and disinfection of rabbit premises and equipment.

CONTROLLING PESTS

Rats and Mice Rats eat and destroy millions of dollars of grain and property on farms. City homes, too, feel the waste and nuisance caused by rats and mice. Down through history rats have been spreaders of disease. In addition to human disease, livestock and poultry epidemics have been traced to rats carrying disease germs from farm to farm.

Thousands of people use Lewis' Lye to help rid premises of rats. If you are troubled with rats, try this simple plan:

Find the holes through which rats enter the building, pour a can of Lewis' Lye down each hole, stopping up the opening with the can or suitable object. Lewis' Lye burns the feet and nose of the rats, causing them to leave the premises.

Moles J. J. Davis, Chief in Entomology, Purdue University, writes: "In our tests and observations, we have found that lye is useful in controlling moles." Purdue Experiment Station directions for using lye for moles are: "The mole runways should be opened with the finger or a small stick and a teaspoon . . . inserted, after which the openings should be carefully closed. Applications should be made at intervals of 10 or 15 feet along the visible runways and should be repeated whenever sections of old runways show signs of being in use or when new ones appear." Use dependable, high test Lewis' Lye.

STORES, HOTELS, INSTITUTIONS

Places where food and confections are kept or prepared will find Lewis' Lye of great value as a disinfectant. With their waste cooking grease they can make large quantities of soap.

Many dollars can be saved in cleaning and laundry supply bills. Hotels and institutions with their many drains and washrooms will find Lewis' Lye the most economical way to keep drains, toilet bowls, urinals clean and sanitary. It will pay managers to study this booklet, file it for ready reference, and keep a quantity of Lewis' Lye on hand at all times.

FARM IMPLEMENTS

Farmers find a solution of 1 can of Lewis' Lye to 1 gallon of water very effective in cleaning up grimy or rusty farm tools and machinery. It helps polish up plows for easier pulling. Scrub with an old brush, broom or rag on a stick. Use plenty of solution. Rinse with clear water. Keep solution off your hands and clothing. To remove paint see page 46.

TRACTOR AND AUTO RADIATORS

As the water in radiators evaporates it leaves behind a layer of scale and foreign matter which reduces the cooling efficiency and water circulation and may result in an overheated engine or a radiator repair or replacement bill. The use of soft water and frequent water changes help, but it is desirable every month or two to remove this scale and sediment with Lewis' Lye. Dissolve 1 can of high test Lewis' Lye in each 5 gallons of soft water. Empty the radiator and refill with this solution. After about 6 hours of engine operation, drain the radiator and refill with clear water. *NOTE.* Some automobiles have aluminum cylinder heads; this should be determined, as lye should not be used with aluminum.

Oil Filters

Tractor oil filters get very dirty; to protect the engine they should be cleaned frequently. If the filter element is made entirely of metal, place in a solution of 1 can of Lewis' Lye in 1 gallon of water and boil for 30 minutes. Remove, rinse thoroughly with hot water, then with gasoline or kerosene before replacing in engine.

GARAGE FLOORS

Garage floors become coated with grease and oil which injure rubber tires. This greasy condition soils shoes and may cause an injury from slipping. Scrape off as much of the coating as possible with a shovel. Dissolve 1 can of Lewis' Lye in half a bucket of water and scrub vigorously with an old broom or brush.

Lewis' Lye helps keep garage floors free from grease.

TREE AND PLANT SPRAYS

The spraying of orchards to control insects and fungi recognized as very inexpensive insurance. Many standa insecticides and fungicides require lye in their preparatio Fruit growers have learned to rely on Lewis' Lye, because its uniform high quality.

Mosses and Lichens

Mosses and lichens on fruit trees harb many injurious insects. They may be r moved by applying a solution of 1 can Lewis' Lye in 2¼ gallons of water. Spra on while the trees are dormant, or swab on locally at any tim

Peach Tree Borers

Swab the above solution on the bark peach trees in late summer to help destr the eggs and young worms.

Lewis' Lye Sulphur Spray

This spray is used as a dormant treatme for San Jose scale. Dissolve 6 cans Lewis' Lye in 2 gallons of water. Slow add 5 lbs. of fine sulphur, stirring steadi until all has dissolved. Dilute with wat to 25 gallons.

Fish Oil Soap

U. S. Department of Agriculture Bullet No. 1666 states: "Fish oil soaps may be us with the following spray materials to increase their sprea ing and adhesive qualities: Lead arsenate, nicotine solution Bordeaux mixture, and sulphur. Soap should not be used lime-sulphur solutions, or in waters strongly alkaline." Yo can make this soap at home at a great saving See direction page 32. One pound of fish oil soap dissolved in each 3 or gallons of water makes a good insect spray for foliage.

Crude Oil Spray

Crude oil spray is very effective in killi many insect pests as well as mosses a lichens. This spray is widely used Pacific Coast fruit growers to destroy r spiders, mites and scale insects.

24 gals. Crude Oil 16° to 22° 5 cans Lewis' Lye
20 lbs. Fish Oil Soap 176 gals. water

Dissolve the 5 cans of Lewis' Lye in 10 or 15 gallons boiling water. Add the fish oil soap, stirring until dissolve Fill the spray tank partly full of water and then add th above mixture. Now add water to bring the tank contents 176 gallons. Start agitator and slowly add the crude oil. D not add water after oil is added. Proportions used are as give in U. S. Dept. of Agriculture Bulletin No. 908.

Black Scale Rosin Wash

Place 20 gallons of water in a tank a add 4½ cans of Lewis' Lye, 3 pints of fi oil and 20 lbs. of rosin. Boil for 3 hour Then slowly add enough water to make 1 gallons of solution. Spray the plants with this wash.

BEE SANITATION

Beekeepers recommend Lewis' Lye sanitation as an aid in profitable honey production. Lewis' Lye is a powerful disinfectant and a great help in removing wax, propolis and dirt. Dissolve Lewis' Lye in a large kettle or tub of hot water, using 1 can for each 10 gallons. Scrape hives, frames, trays and other bee equipment; then soak in the solution for 10 minutes. They will come out in a clean, sanitary condition. Drain and dry before use. Use rubber gloves.

OUTDOOR TOILETS

Keeping outdoor toilets clean, odorless and sanitary is an obligation everyone owes to his family. Lewis' Lye has been used for this purpose for 3 generations. It is effective, inexpensive, handy to use, and its air-tight can keeps it full strength until used. The following rules will aid in the maintenance of a sanitary outdoor toilet.

1. The outhouse should be well ventilated and tightly screened at all points.

2. The seat covers should fit tightly. See that no light enters the pit through cracks or small holes—this is a good test for tightness against flies, which should be excluded.

3. Sprinkle Lewis' Lye into the pit every week—oftener in hot weather—it will aid in decomposition of the fecal matter and help keep down odors.

4. Scrub the seat, floor and walls with a solution of ¼ can of Lewis' Lye in a bucket of water. This will do an excellent job of cleaning, whitening the wood surfaces, disinfecting, and destroying objectionable odors when it reaches their source.

Chemical Closets

Chemical closets with watertight receptacles rely upon a chemical to disinfect, deodorize and liquefy the fecal matter. As stated in U. S. Dept. of Agriculture Bulletin No. 1227, lye is very effective for this purpose. Sprinkle in a little Lewis' Lye every few days. The fecal matter always should be submerged. The receptacle should be emptied frequently and the contents buried or plowed under.

REMOVING PAINT AND VARNISH

Many professional painters know the effectiveness of Lewis' Lye in removing paint and varnish. It does a quick effective job—yet costs but a small fraction of prepared paint-removing liquids. When you refinish a floor, some old furniture or farm machinery, try Lewis' Lye. You will like the easy way it removes the old finish, and you will like the money it saves.

How to Prepare

Dissolve 1 can of Lewis' Lye in 1 quart of water. In another container stir 4 heaping tablespoons of cornstarch into 2 quarts of water. Pour the lye solution into the cornstarch very slowly, stirring continuously to make a thick paste without lumps. Rubber gloves will protect your hands when removing paint.

How to Apply

Metal Surfaces. Swab the paste onto the painted or varnished surface in an even thick coat, using an old brush or rag on a stick. Cover only a small section at a time as the paste must be removed as soon as it shows signs of drying; when it should be scraped off with a putty knife, wire brush or steelwool. The paint or varnish is softened by the Lewis' Lye paste and will come off with it. Do not permit the paste to dry before removing. If parts of the finish do not come off the first time, a second or third application may be necessary. After the finish has been removed from a section, flush it with water before starting on the next section. When the entire surface has been completed, rinse with water and allow to dry thoroughly before repainting. Do not use lye on aluminum.

Small metal parts. These are treated more easily by hanging in a solution of 1 can of Lewis' Lye to each gallon of water. Allow to soak until paint becomes soft. Remove, scrape off paint, rinse and dry thoroughly before repainting. When treating farm machinery, etc., having painted metal parts, it often saves time to remove and treat this way.

Wood surfaces. Follow the same method as for metal surfaces, except more care must be used. All paint removers will discolor wood if allowed to remain on too long. The power that makes Lewis' Lye so effective for removing paint will eventually darken the wood if improperly handled. The secret is to work on a small section at a time, completely removing all traces of the lye just as soon as the softened paint has been scraped off. This is done by flushing the bare wood surface with water and scrubbing with scouring powder to stop all action of the lye. Then proceed with the next small section. After the paint or varnish has been removed from the entire floor or piece of furniture, rinse it again with *fresh* water and allow to dry thoroughly—preferably a day or two. Sand-paper the surface smooth and apply the new finish in the regular way. Do not use on oak floors.

KILLING DANDELIONS AND WEEDS

For years, ridding lawns of dandelions, plantains and other weeds has been a laborious, unsatisfactory task. Digging out weeds is a back-breaking process, and if all the roots are not extracted, the remains soon sprout again.

The makers of Lewis' Lye have developed an easy inexpensive way to kill these pests, right down to the root-tips, so they won't sprout again. Simply place ¼ teaspoon of Lewis' Lye on the crown of each plant. The Lewis' Lye penetrates into the sap of the plant and is drawn into its roots, soon killing it. Grass seed may be planted within 24 hours. Tests in exterminating dandelions and plantains showed that the Lewis' Lye way was 2¼ times as rapid as digging them out by hand. Save this time and hard work when weeding your lawn.

Canadian Thistle

These aggressive weeds have ruined many a pasture and field. Young plants can be killed by placing a ¼ teaspoon of Lewis' Lye on the crown. Older plants should be cut off near the ground and ¼ teaspoon of Lewis' Lye applied on the stalk. Kill all large weeds this same way.

Grass and Small Weeds

To kill grass and small weeds on tennis courts, driveways, stone walks, etc., dissolve 2 cans of Lewis' Lye in 5 gallons bucket or sprinkling can of water. Sprinkle or spray on, using plenty of solution. If the weeds are particularly resistant, treat a second time, using more Lewis' Lye. Rinse the bucket or sprinkling can after using.

COMPOST OR FERTILIZER

Why pay good money for fertilizer when some of the best fertilizing material may be going to waste on your farm? At the same time you are cleaning up your barns and animal and poultry lots you can be assembling valuable compost or fertilizer ingredients. Thrifty European farmers appreciate the value of home-made fertilizer; nearly every farm yard has its compost pile. The American farmer, having more money to spend for store fertilizers and not wanting to have a compost pile in the way for the year or two usually required for it to "ripen" or to turn into real fertilizer, has neglected this economy. When more farmers realize that, aided by Lewis' Lye, compost will "ripen" in about a month, more will want

Lewis' Lye helps make HARD jobs EASY.

to use this way of saving cash spent on fertilizer for buying things that cannot be obtained on the farm.

Directions

Decayed animal and vegetable matter, animal and poultry manure, poultry house litter, straw, weeds, corn cobs, etc., all make good compost. From long boards make a frame like the sides of a box, placing it in an out-of-the-way place near the barn or stable. Pile this refuse material into the frame until about 2 feet deep. Saturate this thoroughly with Lewis' Lye solution made by dissolving a can of Lewis' Lye in each bucket of water required. Use plenty of solution.

Next add about a 5 inch layer of earth; then another 2 foot layer of compost material. Saturate this thoroughly with the same Lewis' Lye solution. Continue adding layers of earth and compost material until all the waste is used up. As more accumulates, start a new pile or add to the old one. After about 1 month of ripening, the compost may be used for fertilizing purposes.

PREMIUM OFFER

Soap Thermometer

Here is an opportunity to obtain a useful thermometer at greatly *reduced cost* by saving Lewis' Lye labels. This thermometer will help you make fine quality soap easily. It is also useful for dairy purposes and other farm and home uses. Cut the large word "Lewis'" from the front of 8 Lewis' Lye labels and mail with 39c in stamps (not coin) to the Pennsylvania Salt Mfg. Co., James D. Swan, Manager of Specialties, 20 No. Wacker Drive, Chicago, and the thermometer will be sent you postage prepaid. This offer is void in any state or municipality where its use is restricted, taxed or prohibited by law. We reserve the right to withdraw this offer without notice and return any money sent.

The recommendations contained herein for the use of Lye, or any apparatus for using Lye, are based upon tests believed to be reliable, but the Pennsylvania Salt Mfg. Co. makes no guarantee of the results to be obtained and assumes no liability in connection therewith.

POINTERS ON USING LEWIS' LYE

To keep Lewis' Lye at full strength, the cover on the can should be replaced tightly to exclude air. Lye solutions not to be used at once should be covered to prevent free access of air, because lye absorbs carbon dioxide from the air, increasing its sodium carbonate content at the expense of the more powerful sodium hydroxide content. As lye solutions are colorless and odorless, if they are not to be used immediately, remove label from an empty lye can and paste on container.

Lewis' Lye is one of the most widely useful of all products for the farm and home. To be so valuable for so many things it must be powerful; but its energy can be controlled just as easily as can fire or electricity. Strong solutions of Lewis' Lye should not be brought in contact with the skin, clothing, leather or painted surfaces—no more than should fire.

When the directions in this booklet are followed carefully, Lewis' Lye can be handled easily without harm. As an added safeguard, you will find rubber gloves will protect you from the strongest Lewis' Lye solutions. Cotton cloth is least affected by lye. Rubbers or rubber boots will protect leather shoes.

Keep lye on a high shelf out of reach of children. Always leave the label on the can until it is entirely empty.

HOW TO TREAT LYE BURNS

Internally, any lye may produce extensive and permanent damage. Consequently, a physician should be consulted as soon as possible to find the extent of the burn, and prevent permanent or dangerous injury. As soon as possible wash the mouth and drink copiously within a minute a quart or more of water to dilute the poison. Acid drinks containing vinegar, lemon juice, etc., are desirable, but it is even more important to dilute the lye with large quantities of water. Follow with olive oil.

Externally, strong lye may produce a deep burn, or weaker solutions may blister. Bathe affected parts with water as soon as contact with lye is discovered—EVERY SECOND OF DELAY MAKES THE BURN WORSE. Here again vinegar, lemon juice, and acid solutions are desirable but dilution with water is the important preventive. After a burn is sustained, keep it dry and use some antiseptic such as mercurochrome to prevent infection at the edge or under a blister. Ointments will do more harm than good in any burn.

Eyes. Wash out with 5% boric acid solution.

You can rely on Lewis' Lye—
avoid substitutes!

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