



Home Tanning of Hides and Furs

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Home tanning can be interesting and rewarding. Of course it takes a lot of time, patience, and hard work, but one can get a reasonably good quality product by following directions and observing some simple precautions. The beginner should be well aware that it is often difficult to achieve professional quality in the first few attempts especially with heavy hides such as those from mature cows and big game. It is better to send valuable furs and hides to a commercial tanner.

Methods given below are suitable for both small and larger animal hides and furs with certain modifications. For a beginner it is advisable to start with skins from such animals as squirrel, rabbit, or raccoon. Once acquainted with the procedure one can attempt larger pelts like sheep, deer, and then cow hide.

Historically tanning was developed as an art. Recent scientific innovations have perfected the technology. The following stepwise directions will help to produce satisfactory results.

Step 1. Preparing the Hide (Fleshing)

As soon as the animal is bled, it should be skinned and the hide fleshed. Excess meat and fat should be carefully removed from the flesh side of the hide ("fleshing"). If tanning cannot be started the same day, care must be taken to preserve the hide without spoilage. Preservation may take the form of drying, freezing, or salting.

Air dry the pelt of small animals like squirrel, rabbit, etc. on a board. Cut the skin down the midline of the belly and tack the skin to a board with the flesh side out for drying. Do not expose the skin to direct sun or heat. Trim off all ragged edges then cut or scrape off shreds of muscle and fat. When dry, remove the pelt from the board and store in a dry, cool place until it is tanned.

Larger hides (deer, elk, antelope, beef, etc.) require salting or freezing to preserve. Spread the hide on a flat place with flesh side up. Smooth out all folds and wrinkles. Trim off all flesh and fat. Cover the flesh side with dry, granulated salt (sodium chloride) at the rate of one pound of salt to one pound of hide. Excess salt will increase the cost, but will not damage the hide. Salt tends to set the fur on fur skin causing it to be held tightly in the hair follicles and extracts moisture from the hide thus preventing spoilage. (Figure 1) Salt does not interfere with subsequent tanning. Be sure all parts of the hide including the

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Figure 1. Cover the flesh side with dry, granulated salt to preserve the hide.

edges are covered with salt. Any unsalted spot is unprotected, and spoilage will occur. If more than one hide is salted, pile them one on top of the other, hair side down with salt on the flesh side of each. Let the liquid from the hides drain away and not collect under the bottom hide. In about a week or two, shake off the salt and hang the hides in a shaded place to air dry. Exposure to sun or direct heat will cause the hide or skin to harden. Salt preserved hide may be stored or tanned. If one wants to store them further, salt the dry hides again and bundle them with flesh side in (Figure 2). Tie the hide bundle with heavy string. Do not use wire. Wire will leave a stain. It is not advisable to store the salted hides too long especially in summer because of deterioration and insect damage.

Step 2. Cleaning and Soaking

Dry hides or salt cured hides have to be soft and clean before tanning. This is achieved by soaking in water. Use several changes of cool, clean water for washing. Use plastic or wooden barrels of 5 to 10 gallon capacity, never use metal containers. Soak the hide for a couple of hours. When the hide begins to soften, lay it on a smooth board or level floor. With a blunt knife or a worn out hack saw blade, scrape the flesh side to break up the adhering muscle tissue and fat. Do not cut into the true skin or expose the hair roots. Do not soak in water too long (3 hours should be sufficient) as the hair may start to slip. Use good judgement. Alternate soak-

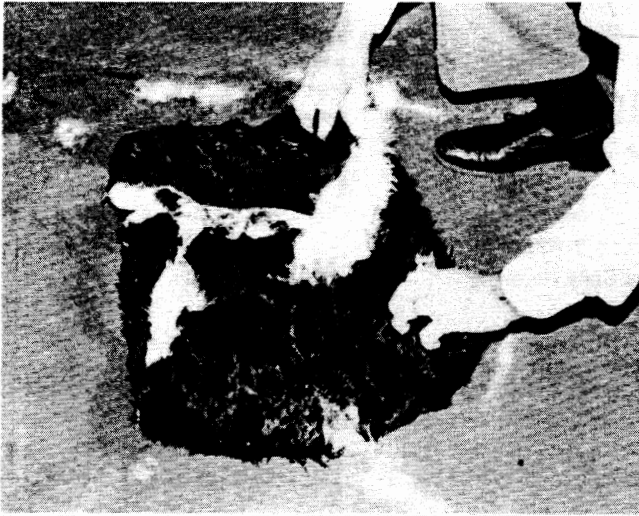


Figure 2. Following the salting fold the hide into a bundle with the flesh side in.

ing and scraping as necessary. When the hide is almost soft, transfer it to a barrel of lukewarm water (75° F) containing one ounce of soda (washing soda) or borax and one ounce of household soap to one gallon of water. Stir the hide with a wooden paddle. This helps in cleaning, degreasing, and softening. Using the back edge of a knife, scrape again the flesh side of the hide while having it on a board or flat surface such as the floor. This "scudding" is very important (Figure 3). It makes the hide soft and supple by breaking the hide fibers. When the flesh side is free of muscle and fat and the hide is very soft, rinse it in clean lukewarm water with several changes of water. Allow the water to drip. Do not wring or twist the hide but lightly squeeze to remove part of the water.

If the hide is to be tanned with "hair on" proceed to step 4 (tanning). If the hide is to be processed into ether, proceed to step 3 (dehairing).

Step 3. Dehairing

Mix hydrated lime with water in the proportion of one quart lime to five gallons water in a plastic or wooden barrel. Do



Figure 3. "Scudding" a hide, scraping the flesh side, is very important.

not use a metal container unless it is stainless steel. Place the hide in lime water. Make sure the hide is completely immersed without folds. Weight it down with a plastic, one gallon milk container filled with water, resting on a board so that the hide is completely immersed in lime water. After 7 to 10 days, test whether the hair slips easily. If not, wait a few more days. When the hair begins to slip off easily, place the hide over a wooden barrel hair side up and scrape with the back of a dull knife. When all the hair slips off, turn to the flesh side and begin scraping to remove excess lime, fat, and flesh material. Repeat on both sides several times. After the hide is completely free of hair, fat, and flesh, soak in clean water for about 6 hours, scrape again. Mix 10 ounces of lactic acid, (technical grade) or one pint of vinegar, if lactic acid is not readily available with 10 gallons of cool water in a plastic or wooden barrel. Place the hide in this solution for 24 hours. This will neutralize the action of the lime. Use chemical proportions equal to the weight of hide or skin.

Step 4. Tanning

For best results, the hide should be free from all muscle, fat, dirt etc. Choose any of the following methods depending on convenience, availability of tanning materials, and enthusiasm. Remember it may be rather difficult to get professional results on the first attempt.

Alcohol and turpentine This is an easy, simple method quite suitable for rabbit, squirrel, and other small fur skins, and as a beginning project.

A wide mouthed gallon jar or a plastic bucket with a tight lid may be used for small fur skins. Make a mixture of equal parts wood alcohol and turpentine enough to completely immerse the fur skin. Close the lid tightly to avoid alcohol evaporation. Stir the contents several times a day. After one week remove the skin from the tanning solution. Rinse the skin in clean water several times changing the water after each rinse. Drip-dry the skin. Do not wring. When the skin is partially dry, proceed to step 5—oiling and finishing.

Chrome tanning is a chemical process. Satisfactory results may be obtained when correct procedures are followed. Buy technical grade chemicals. All chemicals should be dry and pure. The chemicals required are: (1) Chrome alum (chromium potassium sulfate crystals), (2) Soda ash (sodium carbonate crystals), and (3) Salt (sodium chloride).

Make the following solutions separately in wooden or plastic containers. Do not use metal containers. Use clean cool water. The quantities of chemicals and water are for 32 pounds of water (water; 8.3 lb per gal). For heavier or lighter hides increase or decrease the chemicals and water proportionately. The rest of the procedure is the same irrespective of the hide weight and size.

- (i) To 3 gallons of clean water, add 3½ pounds soda ash (sodium carbonate crystals) and 6 pounds of salt (sodium chloride). Stir to dissolve completely. Make sure all the solids are completely dissolved in the solution.
- (ii) To 9 gallons of water, add 1½ pounds of chrome alum. Stir frequently to completely dissolve. The crystals take time to dissolve. Therefore, be patient. Frequent stirring with a wooden paddle helps. When the two solutions are ready, add the soda salt solution very slowly to chrome

alum solution with constant stirring. When the two solutions are thoroughly mixed, cover and set aside.

Day 1: When ready for tanning, pour 4 gallons of chrome soda salt solution in a 50 gallon wooden or plastic barrel and add 32 gallons clean water. Mix. Slowly immerse the clean hide (from Step 2 or Step 3) into the solution without any folds. Let the solution come into contact with all parts of the hide. Stir frequently at least 6 times each day for 3 days. Day 4: Remove hide from the barrel. Add one half of the remaining chrome soda salt solution to the barrel, mix and immerse the hide. Move hide in the solution by stirring every day as previously described. Day 7: Remove the hide from the barrel, add the remaining chrome soda salt solution, mix thoroughly and once again immerse the hide. Move hide in the solution by stirring as before. Day 10: Cut a thin strip of hide from the neck area and examine the cut surface. If the cut edge is evenly green or blue in color, the tanning is complete. Boil a small piece of the tanned hide in water. If it curls up and becomes hard and rubbery, the tanning is not complete. Leave the hide in the tanning solution for a few more days. When the hide is completely tanned, boiling should produce little or no change in the boiled piece of hide.

When the hide is tanned, remove it from the tanning solution and put it in a barrel of clean water. Dump the used tanning solution carefully. It is harmful to soil and fatal to farm animals if they drink it. It is better to dump the solution in a deep pit away from water source and cover it well with dirt. Wash the hide thoroughly in clean water using 4 changes of water. Transfer the hide to a barrel containing 20 gallons water mixed with one pound borax. Stir as often as possible and leave the hide to soak overnight. Next day remove the hide from the borax solution, soak it in clean water for one day, change the water about 6 times. Remove from water and place the hide on a beam to drip off water. Do not squeeze or wring. When the hide is partially dry, proceed to step 5 (oiling and finishing). Glutaraldehyde tanning This method is quite suitable for skins with fur or wool like those from sheep and deer skin. The tanned skins are launderable. Prepare the skin by carefully removing all flesh and fat from the flesh side. Make a soap or detergent solution by mixing one to two cups mild soap or detergent in 11 gallons of lukewarm water not exceeding 90°F. Thoroughly wash the hide in this cleaning solution until the fur or wool looks clean. Rinse in several changes of clean water, then squeeze out the excess water. Weigh the skin and record its weight. If tanning cannot be started immediately, rub the flesh side with granular salt (one pound per pound of skin). Fold in the flesh side from each end and store in a cool dark place. Before tanning, soak the skin in cool water for 2 to 3 hours until it becomes soft, and all salt has been removed. Do not tan a hide that shows fur or wool slippage.

Make the following solution in a plastic or wooden barrel. For every pound of clean skin use a half pound technical grade salt (sodium chloride), and five quarts of water (lukewarm). Mix well to dissolve all the salt. Add 2 $\frac{1}{4}$ fluid ounces glutaraldehyde (25 percent commercial solution) carefully to the salt solution and stir well with a wooden paddle to mix. Glutaraldehyde is a skin irritant. Be careful in handling this chemical. Keep it out of the reach of children. Use rubber apron, safety glasses and rubber gloves. Slowly immerse the skin. Avoid splashing. Stir the solution and skin well for 5 minutes. Continue stirring at hourly intervals the next day. For proper tanning it requires

a minimum of 48 hours. Continue for another 24 hours for a total of 72 hours. To test whether the skin is properly tanned, cut a strip of skin about three inches long and tie it at the top and bottom to a thermometer using a piece of string. Place the thermometer with skin in a pan of cold water and slowly heat the water. Observe the temperature when the skin starts to shrink. When the skin begins to shrink at 176 to 185°F, the tanning is complete. Remove the skin from tanning solution. Wash in several changes of water. Hang the skin wool or fur side up and let the water drip. When the skin is partially dry it is ready for Step 5 (oiling and finishing).

Step 5. Oiling and finishing

For every 10 pound hide, mix 3 $\frac{1}{2}$ ounces of sulfated neats foot oil with 3 $\frac{1}{2}$ ounces warm water and 10 ounces of household ammonia. When the tanned skin or hide is still damp, apply a coating of the fat liquor oil. (Figure 4) Place the hide or skin on a flat surface hair or grain side down. Smooth out any wrinkles. With a paint brush apply the fat liquor on the flesh side evenly until one half of the solution has been applied. Allow it to dry for about 30 minutes. Apply the remaining fat liquor as before. Cover with a sheet of plastic like a garbage plastic bag. Let the hide remain overnight. If several skins are used at the same time they may be placed flesh side to flesh side overnight.

Next day hang the skin hair side out to dry for a couple of hours. Take a plywood board and nail the skin flesh side up. Stretch the skin slightly and nail it to the board every 6 inches around the circumference about a half inch from the edge of the skin. (Figure 5) Let the hide or skin dry at room temperature. When the skin is partly dry but still damp, remove the nails. Stretch the skin from corner to corner by pulling. Work on the flesh side over a wooden edge such as the back of a chair, side of a desk, or a piece of board clamped in a vice. (Figure 6) Continue this stretching several times until the hide is completely soft. This is hard work and requires strength and patience. Much of the success in getting a soft skin lies in repeated working while the hide is still damp. If the skin is not soft enough then evenly dampen the flesh side and work again while drying. A successful skin is quite soft and pliable when completely dry.

To degrease and deodorize the tanned skin, give it a hasty bath in white or unleaded gasoline. Be careful with gasoline.

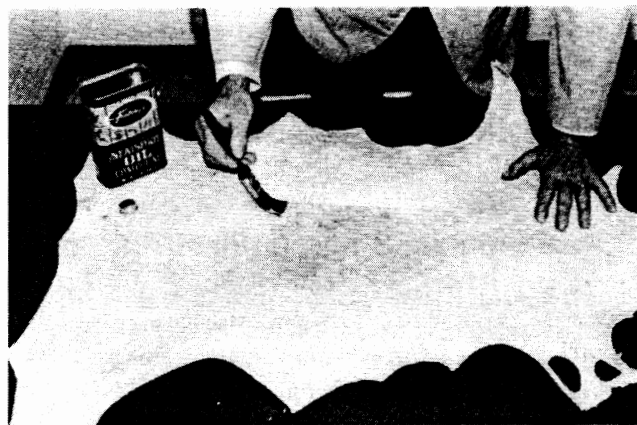


Figure 4. Apply a neatsfoot oil mix evenly over the flesh side of the hide.

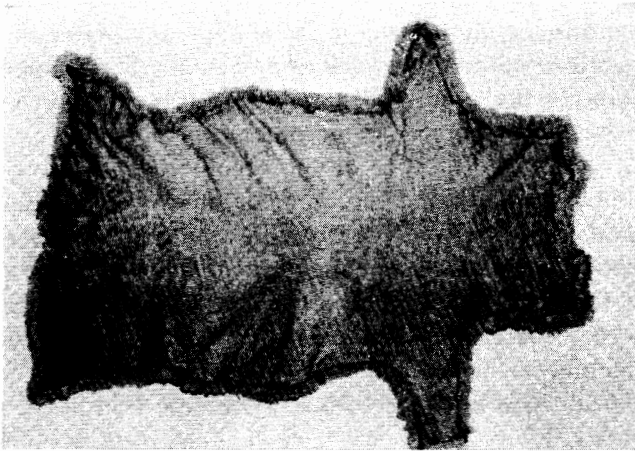


Figure 5. Stretch and nail the hide to a board for dry-

It is highly flammable. This should be done outdoors away from fire or flame.

To brighten the fur or wool skin, tumble it repeatedly in dry warm saw dust, bran, or corn meal. Remove the particles of saw dust by gently shaking, combing, and brushing the wool or fur. Smooth the flesh side by working over it with a medium or fine sandpaper block. Thicker sections of the hide may be sanded off.

People who do home tanning find the work hard but very rewarding. It is wise to practice tanning small skins or furs in order to learn the procedure. The time involved in hand scraping the skin will not seem so great and a nicer finished job will be accomplished. Some of the common chemicals can be obtained from the local drug store. In some cases the druggist or farm supply store will be able to order the materials. Leather stores or shoe shops may also be able to help with the needed materials. If local firms do not have the needed supplies, you may be able to get all the necessary materials from the following listed firms.

Curtin Matheson
6550 E. 42nd St.
Tulsa, Ok 74145

Fisher Scientific
4301 Alpha Road
Dallas, TX 75234



Figure 6. Work the hide over a wooden edge until the stretching makes it completely soft.

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