Tobacco and Tobacco Products

Revised 2018

Storage Conditions

	Temperature		Relative Humidity	Storage Period
	°F	°C		
Tobacco in bales	35 to 40	2 to 4	80 to 85%	1 to 3 years
Tobacco in hogsheads	50 to 65	10 to 18	50 to 65%	1 to 3 years
Cigars	35 to 50	2 to 10	60 to 65%	2 months
Cigarettes	35 to 46	2 to 8	55 to 60%	4 to 6 months
Snuff	36 to 38	2 to 3	80 to 82%	3 to 5 months

Controlled temperature and relative humidity storage of unmanufactured tobacco, bales or hogshead, for "aging" is not a standard practice in the United States. Unmanufactured tobacco is normally aged 1½ to 3 years before it is used for cigarettes. The moisture content of the tobacco going into storage is critical to get the proper chemical and biological activity necessary to "age" properly. If the moisture content is too high mold will develop and if it is too low the tobacco will shatter during packing. Temperatures 65 to 75°F (18 to 24°C) will stimulate the chemical and biological activity whereas temperatures 35 to 40°F (1.7 to 4.4°C) and lower will minimize it. The seasonal alternations in temperature thus stimulate and lessen chemical and biological activity in the aging tobacco.

Cold temperature rooms have been used in the U.S. to hold high moisture content tobacco at packing plants. This tobacco would come from the sales floor and would be held for short term storage before re-drying for aging. Temperatures of 35 to 40°F (1.7 to 4.4°C) would be used for this process. This is done to prevent deterioration in quality and prevent development of mold. Refrigerated storage of these tobacco items assists in maintaining the desired moist and fresh quality and inhibits insect infestation. Particularly for well-sealed packaged cigarettes, humidity is not as critical as a constant temperature, preferably 35°F (1.7°C).

One manufacturer suggests that cigarette cases in storage should be stacked on end on pallets large enough to prevent over-hang or on clean wooden dunnage, at least 3 inches (7.6 cm) off the floor, right side up with all flaps on the same side of the case. Stacking should be 3 layers to a pallet, triple deck, provided such stacking does not cause bulging or buckling of the bottom cases. Stacking in this manner facilitates automatic reopening of the case flaps for tax stamping.

Successful control of the cigarette beetle in tobacco exposed to zero and subzero temperature was reported in 1951 by the U.S. Bureau of Entomology and Plant Quarantine (J. N. Tenhet and C. O. Bare, Cold Storage to Control the Cigarette Beetle in Cigar Tobaccos, USDA-E 827, November 1951). In tobacco cases holding 400 pounds (181 kg) stored at -10°F (-23.3°C), only 1 day was required for the tobacco

temperature at a depth of 5 inches (12.7 cm) to fall to 0°F (-18°C), compared with more than 5 days at 15 inches (38.1 cm). Additional cold storage information is reported in USDA Ag. Handbook 233(1972).

Mortality of the insects depended on the circulation of air in the storage rooms, and upon the moisture content of the tobacco. Exposure to -10°F (-23.3°C) in circulation air was more effective than exposure to -20°F (-28.9°C) in still air.

For tobacco of medium order, a 3-day exposure to -10°F (-23.3°C) environment, with air circulation, was as effective as fumigation. For soft tobacco, an exposure of 4 to 5 days was necessary. The low temperature did not injure any of the tobaccos. Some of the dry tobaccos were improved by moisture pickup. All samples were dry and hard on removal from storage but softened through moisture absorption as the tobacco warmed up. Unprocessed tobacco should not be frozen. Unprocessed tobacco has higher moisture content; and therefore, freezing will cause discoloration.

There is a characteristic odor to baled tobacco, but it is not pungent or penetrating as is the case with hops. When a storage room is emptied, all traces of aroma are easily eliminated by ventilation. However, it is safest not to store any odor-producing or odor-absorbing commodities in the same room with tobacco.

In cigarette and pipe tobacco manufacture, the shredded, granulated or chopped-up tobacco is heat conditioned. In all heat-conditioning processes observed (Ag. Handbook 233), temperatures were not high enough or maintained long enough to result in appreciable insect mortality. Cold or cool storage is of great value in preventing or checking insect infestation. For moth and beetle, the threshold of activity is approximately 60°F (16°C). Lower temperature reduces and arrests activity. If the tobacco is held long enough, at a low enough temperature, the insects will eventually die. Cigarette beetle infestations in hogsheads of tobacco (flue cured) are destroyed at 40°F (4.4°C), 45°F (7°C) and 48°F (9°C) with respective exposures of 12, 20, and 32 weeks.

Tobacco currently is stored in bales, cases or hogsheads for domestic and export markets. Some insect survival will occur in the process of re-drying tobacco before it enters storage. Cool storage prevents discoloration of tobacco leaves.

Since pipe and chewing tobaccos are rarely fumigated after manufacture, they must be protected in storage to prevent loss. Packaging is valuable in this respect.

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