

HUNTINGDON (Huntingdon Co.) — Milk processors should switch from packaging milk in translucent plastic jugs to pigmented, light-blocking jugs, said a dairy products specialist in Penn State's College of Agricultural Sciences.

"When exposed to light, milk in translucent plastic containers can develop a tallowy, woody or cardboard-like taste," said Sidney Barnard, professor of food science. "The chemical off-flavor develops with exposure to as little as 20 minutes of direct sunlight or 24 hours of fluorescent light at intensities above 100 foot candles."

Barnard led a team of faculty and students who purchased and evaluated 449 samples of milk in

plastic jugs from Pennsylvania stores over the past three years.

"Almost half the samples, or 48 percent had pronounced light-induced flavors when evaluated within 36 hours after purchase," Barnard said.

The flavor change is accompanied by a decrease in the milk's nutritional properties. "Light exposure causes milk to lose vitamin A and riboflavin," Barnard said.

"The amount of nutrients lost and the intensity of the flavor change is determined by the intensity and nearness of the light and the length of exposure."

"Consumer preference studies have shown that four out of five people prefer milk without light-induced flavor," Barnard said.

"This means that milk in translucent jugs is a definite problem for the milk industry."

"The incidence of pronounced light-induced flavors leads to the conclusion that all milk should be packaged in pigmented plastic jugs rather than translucent ones," he said. "This pigment can be a combination of titanium dioxide, talcum powder and yellow color at concentrations that block about 90 percent of short wavelength light rays."

Children in particular may find the light-induced flavor of milk distasteful. To get children to drink the milk they need for bone development and good health. Barnard suggested purchasing milk in pigmented plastic jugs or paper containers.

"Pigmented plastic jugs or paper cartons are the only containers that prevent off-flavor development and vitamin loss from milk purchased in stores," he said.

Since the 1940's, researchers at more than a dozen universities have studied the causes and prevention of light-induced flavor. A chemical company developed the first protective container in 1969 for a former Pittsburgh milk plant. The design wound up being popular with the household bleach industry, because it prevented significant losses in strength.

About three years ago, orange juice makers started using pigmented plastic to prevent a flavor defect and the light-induced destruction of Vitamin C. At least seven fluid milk processing plants

in the United States use pigmented jugs, including one in Pennsylvania and one in Maryland. Barnard said it's time more milk processors followed suit.

#### Poison Prevention Tips

A large percentage of accidental poisoning in the U.S. occur in children under the age of five. But several steps can be taken to protect children and others from poisonous substances, said a Penn State consumer education specialist.

"Parents must be very watchful when using household chemicals or medicines," said Dr. Cathy Bowen, assistant professor of agricultural and extension education in Penn State's College of Agricultural Sciences.

# THIS WILL (LITTLE PELLET) MAKE IT EASY TO BUY BULK MINERALS.

## Consultants Benefit Landow

### YURIY BIHUN

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UNIVERSITY PARK (Centre Co.) — If you're like most woodlot owners who decide to harvest timber, you usually sell stumpage - standing timber - or market your cut sawlogs roadside to a log buyer, timber harvester or sawmill owner.

Some landowners shop around, others take the first offer that comes down the pike. Since most forest landowners are not professionals at marketing timber, you may come out a loser in the deal without help from an expert.

In Pennsylvania, less than 25 percent of all timber sales on private, non-industrial woodlands involve the service of a profession-

al forester.

However, repeated studies have shown that forester-assisted timber sales net a greater return for the landowner and more than cover the cost of hiring a professional forester.

Three-quarters of all sales that involve a forester require an up-front lump sum payment to the seller before harvesting begins as opposed to a "pay-as-you-cut" method.

Moreover, competitive bidding procedures are used on forester-assisted sales, which usually result in higher returns to the landowner.

Sound forest management usually results in a more productive forest and continued income-producing potential from future growing stock.

A competitive bid sale allows the landowner or forester more control over harvesting activities and the flexibility to implement practices that reflect the principles of forest stewardship.

Those who are first-time timber sellers may have some questions about where to begin.

For instance: How is timber marketed on the stump? Is timber selling similar to selling livestock or tobacco? What goes on when a timber sale is put up for bids?

The first step in selling timber on a competitive bid basis is to send out a request to potential buyers to submit written, sealed bids on a particular tract of timber and an invitation to a timber showing.

A prospectus that includes a timber sale map, timber sale vol-

ume estimate, and a bid form should be enclosed with the invitation letter.

In addition to volume estimates and calculations, the contract requirements and sale specifications should be included in the prospectus.

Although not all foresters include the same information in their prospectus, some of the items that can be expected to be included fall under the categories of sale specifics, volume calculations, and contract executions.

Under sale specifics, expect to include details of the acreage included and a map; the number of stands or cutting units; a timber and marking system; road construction; seeding and mulching of lot landings; the method of silvi-

culture (for example, specify whether the potential harvester is to clearcut, or take individual trees.); the dates and a time limit for harvesting; outline any special features for protection, such as biological or archeological features; stump height requirements, tree top-logging specifications, slash (residue) treatment; and details for crossing streams.

Under the category of volume calculations, provide the sawtimber and pulpwood volumes, by species, stand or cutting unit; the number of trees; average volume (per acre, or per tree); log scale; and site index. Even if each tree has been tallied, volumes are not guaranteed and the bidder has to make his (or her) own estimate of the merchantable volume. Gener-