

Minty-Fresh Fumigants

Environmental concerns are causing many key components of currently used fumigants to lose their federal registrations. And some stored-product insect pests are beginning to develop resistance to some widely used fumigants. These two trends could spell trouble for bulk grains that must be held in storage until markets open up for their sale and use.

So researchers have been testing oils extracted from 16 medicinal plants and spices for their effects against one important pest, the rice weevil, *Sitophilus oryzae*. This tiny insect causes major problems in granaries worldwide, reducing the grain's nutritional value and ability to germinate and exposing it to odor, mold, and heat damage.

The most potent antiweevil oils proved to be found in Japanese mint, *Mentha arvensis*. Its active ingredient, menthone, could provide the basis for a new, environmentally friendly fumigant. But additional testing is needed to determine its impact on grain's smell and taste. *Bruce C. Campbell, USDA-ARS Plant Mycotoxin Research Unit, Albany, California; phone (510) 559-5846, e-mail bcc@pw.usda.gov.*

Don't Forget Your Folate!

Careful scrutiny of data from NHANES III, a recent nationwide health and nutrition survey, showed that fortification of grain products with the B vitamin folate may help reduce memory loss in the over-60 set.

The researchers were looking for a relationship between blood homocysteine levels and memory loss. Homocysteine is a byproduct of our own amino acid metabolism that has been implicated in the risk of stroke.

Previous research had shown its levels to be higher in elderly persons with low vitamin B intakes—especially folate. B vitamins are involved in the synthesis of chemicals crucial to brain function. It

is also possible that homocysteine itself might be toxic to nerve cells.

This nutrition analysis confirmed a link between elevated homocysteine and memory loss in elders. But survey subjects with blood folate levels in the upper half seemed to be protected from memory loss, even if their homocysteine levels were high. So it appears to be important to maintain an adequate folate intake—now easier thanks to industry fortification of grain products. *Martha M. Morris, Jean Mayer USDA Human Nutrition Research Center on Aging at Tufts University, Boston, Massachusetts; phone (617) 556-3302, e-mail morris@hnrc.tufts.edu.*

High-Selenium Broccoli Stymies Some Cancers

Broccoli stores selenium in an especially useful form (called SeMSC) that is easily converted into an active anticancer agent. Now scientists have succeeded in greatly boosting the selenium in specially grown broccoli.

Earlier studies showed that laboratory rats fed experimental high-selenium broccoli and broccoli sprouts developed fewer precancerous lesions when exposed to known carcinogens than did rats given selenium salts—either selenate or selenite. The rats were fed the rough equivalent of a 200-microgram human dose of selenium daily.

The new tests showed that high-selenium broccoli sprouts protected the rats against precancerous lesions in the colon, while high-selenium broccoli protected against mammary tumors.

Specially produced for this research, the experimental broccoli heads and sprouts used in these studies aren't available commercially. And further study is needed to show whether these findings will also prove true in humans. *John W. Finley, USDA-ARS Grand Forks Human Nutrition Research Center, Grand Forks, North Dakota; phone (701) 795-8366, e-mail jfinley@gfhnrc.ars.usda.gov.*

JACK DYKINGA (K4297-14)



A new planter grid promises farmers higher peanut yields.

Staggered Planting Produces More Peanuts

A new planter and planting pattern could soon be bringing peanut growers bigger yields. The new system plants seeds in a grid-shaped pattern that accommodates up to 12 rows on 72-inch-wide raised beds. In 2001, plantings of 12 seeds per foot yielded an average of 4,710 pounds of pods from single-row plots, but double-row and 8-row grids yielded 4,730 pounds and 5,860 pounds, respectively.

The grid spacing promotes thicker canopies that spread faster, thus keeping the soil bed cool and moist. This also improves weed control and protects against erosion.

The new planter can create grid rows as readily as the conventional single and twin rows sown today. It can be modified to sow other crops as well.

A specially designed peanut digger has also been invented that unearths pods across a 72-inch bed, regardless of pattern. A patent is being sought for the innovative machinery. *Don Sternitzke, USDA-ARS National Peanut Research Laboratory, Dawson, Georgia; phone (229) 995-7432, e-mail dsternitzke@nprrl.usda.gov.*