



Levels of monuron and neburon and rate of disappearance from soil in 0 to 6-inch depth through period of 9 months.

months, only 10 to 18 per cent of the monuron remained, while about 40 per cent of the neburon was still present in the soil. Results indicated that neburon disappeared from the soil more rapidly when applied at two pounds than at higher rates. The amount of neburon found in the initial soil sample, taken shortly after application (at the 2-pound rate), was considerably higher than expected, however, as compared with levels found in soil treated with higher rates. Because the rate of breakdown is based on these initial rates, this could account for an apparent acceleration of disappearance.

Conclusions

This experiment will be carried on for at least another year, involving from 2 to 3 additional cropping sequences. It can be concluded, however, that under the abnormally dry season experienced in southern California during the winter of 1960-61—and under cropping and furrow irrigation for 4 months of the 9-month interval—both neburon and monuron disappeared relatively slowly. Fifty per cent of the monuron disappeared in from 4 to 5 months, whereas it required 8 to 9 months for neburon to reach the same level.

It must be remembered that this experiment differs in one important respect from a normal herbicide application to a growing crop. Although a 2-pound application of either material would be a rate normally used for weed control, this

is usually applied to the surface of the soil. In most cases it would remain on the surface for a considerable length of time rather than be incorporated immediately as was done in this experiment. It is possible that the breakdown pattern under such conditions may be somewhat changed. The results of this study would therefore apply particularly after the soil has been disturbed and incorporation of the herbicide into the soil has been accomplished.

Peppers add vitamins, flavor to

NEW TOMATO JUICE COCKTAIL

Mixing 5 per cent red bell pepper juice into regular tomato cocktail offers processors a new flavor possibility as well as significantly increasing both vitamin A and C content of the canned juice.

Red non-pungent peppers are sweeter, more acid and possess flavors quite different from those of green bell peppers sold in the vegetable markets. Ripe bell peppers contain as high as 250 milligrams per 100 grams fresh weight of ascorbic acid (Vitamin C) and large amounts of beta carotene (pro-vitamin A).

To take advantage of the flavor characteristics and high vitamin content, freshly-harvested ripe bell peppers were blended in various combinations with ripe tomatoes. The peppers were washed

and cored (uncored peppers can be used in plant operations), then macerated together with the tomatoes in a "Spike" stainless steel hammer-mill, passed through a juice extractor with a 0.33 inch screen, and the air removed in a centrifugal vacuum deaerator. Then 0.6 per cent by weight of sodium chloride was added to the mixture.

If the pH of the raw juice is above 4.5, it is desirable to add 0.1 per cent citric acid by weight or an equivalent amount of lemon juice. The mixture was heated in a stainless steel steam-jacketed kettle to 200°F. It was then transferred to No. 2½ cans and processed in a rotary cooker at 212°F for 10 minutes, followed by cooling to 110°F in a rotary water-cooler for 7 minutes. The use of enameled cans is suggested.

Preliminary tests in the laboratory indicated that when only 2 per cent by weight of peppers was added there was no distinct difference in flavor of the juice. Five per cent peppers seemed to be the most desirable concentration. Ten per cent gave the juice a pronounced and sometimes undesirable pepper flavor. Chemical analyses showed that the 5 per cent pepper blend contained 57 per cent more ascorbic acid and 22 per cent more beta carotene than ordinary tomato juice processed using the same materials and methods.

Increased Vitamin Content Shown in Analyses of Tomato Juice and Cocktail Blend

	Per- cent total acids as citric	pH	°Brix 20°C	Brix acid ratio	Ascor- bic acid (Mg per 100 grams)	Beta caro- tene*
Tomato juice	0.44	4.0	5.3	12.1	16.6	0.53
Cocktail blend	0.45	4.0	5.6	12.4	26.1	0.65
(95% tomato and 5% red bell pepper)						

* 1 mg beta carotene = 1,667 International Units Vitamin A.

In a consumer survey of 95 families, 70 per cent liked the 5 per cent bell pepper blend very much, 17 per cent were indifferent, and 13 per cent disliked the flavor. In another survey of 252 individuals in 112 families, 56 per cent stated they would buy the pepper blended juice should it become available on the market.

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