

# BRIEFS

## Short reports on current agricultural research

### Potash on

#### POTATOES FOR CHIPS

A three-year study, begun in 1958, is seeking to evaluate the effects of sulfate of potash and muriate of potash on potatoes grown for the manufacture of potato chips. Soils low in potash, as determined by tests, were chosen for study. At planting time, potash representing both types—sulfate and muriate—is applied, in bands, at rates of 0, 100, 200, and 300 pounds per acre, together with supplemental nitrogen and phosphorus. During the growing season, potato petioles are analyzed to determine nutrient uptake by the plants.

At harvest, yield and grades of the potatoes are recorded, and specific gravity is determined with a potato hydrometer. Potatoes are chipped before and after storage tests to evaluate effects of potash on weight changes of tubers and on chip color and oil content. Fresh tubers are also analyzed for percent of reducing sugars present. These substances are primarily responsible for darkening of potato chips.

When studies are complete, it is hoped that recommendations can be made, with respect to potash application, that will result in larger yields of quality potatoes for processing.—*Herman Timm, Dept. of Vegetable Crops, Davis.*

#### POTASH

##### in California vineyards

Potash needs of California vineyards are being investigated. To date, striking results have been obtained in vineyard test areas where potash was so badly needed that leaf symptoms were visible. Heavy applications of potassium sulfate, trenched in near the root zone, have resulted in recovery of vine growth and normal production of vines. These findings prompted the question, might vineyards not showing visible symptoms still be deficient, and if so, how could deficiency be detected?

Tissue samples of leaves from many vineyards throughout the state have been analyzed for potash content. Test plots have been set up in three vineyards showing no visible evidence of potash need, but from which leaves showed low potash content under analysis. The vine-

yards are in Madera, Stanislaus, and Napa counties.

From past experience, it is known that, when deficiency symptoms are severe, heavy dosages of potash may be required, and two or three years may elapse before the plants respond. Trials will therefore continue for several years. The aims are to determine how low the potash level, as shown by leaf-stem analysis, may be allowed to drop before it is economically worthwhile to apply potash fertilizer, and to determine how much must be applied in such cases to bring about a response.—*James A. Cook, Dept. of Viticulture and Enology, Davis.*

### Chemical weed control in

#### AZALEA SEED CROP

Grasses and annual broadleaf weeds in azalea plantings were controlled in Santa Barbara County test plots treated with Neburon.

Tests were made with Neburon and with CDEC on replicated plots of two-year-old plants of Redwing, Early Wonder, and Madam Mestdag varieties set in raised beds of 90% peat and 10% wood shavings. The chemicals were sprayed over the foliage of the plants. Variety Madam Mestdag was severely burned by CDEC liquid but many defoliated plants recovered. There was no visible foliage burn from Neburon or from CDEC granular on any of the varieties in the test and CDEC liquid did not damage either Redwing or Early Wonder varieties.

Weeds removed from the untreated checks at monthly intervals included annual bluegrass, bitter cress, yellow oxalis, and common dandelion. Neburon at two pounds of active ingredient in 100 gallons of water per acre and CDEC liquid and granular at eight and 16 pounds of active ingredient per acre gave good weed control for four months. Neburon at 4, 8, and 16 pounds per acre gave good weed control through the entire season. However, variety Redwing, treated with Neburon at 16 pounds per acre showed some yellowing of the main veins of the leaves. No damage to azaleas occurred at rates of eight pounds or less of active Neburon per acre.—*Jack L. Bivins and William A. Harvey, Agricultural Extension, Davis.*

### Copper in

#### EMBRYONIC DEVELOPMENT

Small amounts of copper in the diet are important in embryonic development. Copper is needed for normal bone development, hemoglobin synthesis, nervous tissue development, and the maintenance of hair color. The requirement for this mineral differs widely among species. Deficiency may be a practical problem for cattle and sheep on certain pastures, while requirements in other species or man may be minor. Recent research has proved that copper concentrates in certain tissues such as brain and liver, in certain disorders, with damaging effects.

Nutrition studies have confirmed several types of copper deficiency symptoms in the guinea pig. Copper-depleted females show an excessive loss of hair, which also becomes greatly changed in texture. After denuding, new hair returns following delivery of the young but in several instances the pigmentation is altered. Bone and nervous tissue are being studied to determine in what manner too little copper alters tissue development.—*Gladys Everson, Dept. of Home Economics, Davis.*

### Color and stability of

#### WINES

Alcohol is the main factor in the release of color from the skins of wine grapes. On the average, 80% of the color is released from grape skins at 3% alcohol and 100% at 6% alcohol. Elimination of fermentation for color-extraction purposes would greatly increase fermenter turnover and allow the handling of red grape juice for wine as white juice is now handled.

Research under way is designed to determine why some wines gain color on aging, some wines lose color, and others change but little. Results of this research should enable control of wine color stability.

Wine holds a great deal more potassium bitartrate and calcium tartrate in solution than alcohol-water. When the responsible factors are known and their effects can be measured an accurate chemical test for tartrate stability should become available.—*Harold W. Berg, Dept. of Viticulture and Enology, Davis.*