

are Sul-Po-Mag or Epsom salts. Sul-Po-Mag is the better choice if potassium is also required, as it is less expensive than Epsom salts. However, Epsom salts can be applied as a foliar spray to alleviate Mg deficiency. Dissolve 1.5 lb per 10 gal water and spray at weekly intervals.

Phosphorus is low in many New England soils, and can limit crop growth, especially early in the season. Soils testing less than 10 lb/acre available phosphate (P_2O_5) usually require substantial applications of phosphate. Hard rock phosphate contains about 2% available P_2O_5 , soft, or colloidal, rock phosphate contains 3% available P_2O_5 . Thus, a ton of these materials provides only 40 to 60 lb available P_2O_5 /acre. Bone meal contains about 20 times more available P_2O_5 by weight, but is more expensive. With soils low in P, it can help crops to place proportionally more P fertilizer in the crop row than to broadcast it evenly. Maintain a pH of 6 to 7 with limestone to maximize P_2O_5 availability. Compost and manures tend to contain P_2O_5 than N or K_2O , but repeated applications will raise P levels substantially.

Potash is very slowly available from granite dust or greensand, which are applied at 3 to 5 tons to the acre to build up K reserves. Wood ashes contain soluble K, but must be used with caution because they will raise the pH rather rapidly and can be caustic. The liming effect of 1 pound of ashes is roughly equal to 2/3 of a pound of limestone. No more than 1/2 ton of ashes per acre should probably be applied at once, and only then if called for by low pH, low K and sufficient Mg. Sul-Po-Mag is the K fertilizer of choice when Mg is also needed.

Minor elements are generally sufficiently supplied to plants by regular additions of organic matter to the soil. Some seaweed extracts may also supply trace minerals. In soils low in boron (B), remedial applications are widely recommended for crops that readily suffer from B deficiency, such as crucifers. In this case, 1 to 2 lb/acre of B is applied to the soil with other fertilizers. Several forms of B are organically permitted, including Solubor (20% B) and Borax (11% B). It is advisable to monitor B levels with soil tests and tissue tests (for perennial fruits). Excess levels of B are toxic to plants, and some crops are quite sensitive to boron.

Organic Certification

Some small fruit growers choose organic production methods. Consumers of organic produce

represent a growing market niche. This market is increasingly looking for certification to substantiate product claims. Federal legislation will soon require certification of food products that are labeled as organic except for producers who gross under \$5,000.

It is likely that many state groups currently administering organic certification programs will continue to do so with USDA approval in the future. In New England, NOFA (Natural Organic Farmers Association) and MOFGA (Maine Organic Farmers and Gardeners Association) have certification programs; in some cases, these programs are operated in conjunction with the cooperation of a state agriculture department. If you are considering organic production, you should obtain and examine the written standards that detail the allowable practices and materials. These are available from your state certification contact, listed below.

CT	Pat Beardsley, P.O. Box 11, Gaylordsville, CT 06755 (203) 929-3080
MA	Ed McGlew, 140 Chestnut St., W. Hatfield, MA 01088 (413) 247-9264
ME	MOFGA, P.O. Box 2176, Augusta, ME 04338 (207) 622-3118
NH	Vickie Smith, NHDAMF, P.O. Box 2042, Concord, NH 03302-2042 (603) 271-3685
RI	Dan Lawton, Div. of Ag., 22 Hayes St., Providence RI 02908 (401) 222-2771
VT	NOFA, P.O. Box 697, Bridge St., Richmond, VT 05477 (802) 434-4122

About Pest Management

Effective fruit crop production depends on the grower developing a system of crop management that is appropriate for each farm. Decisions need to be made for how to manage all of the normal cultural practices such as planting, fertility, harvesting, and pruning as well as managing the insect, disease, and weed problems that occur either regularly or sporadically. The information in this guide will address management issues related to both common, expected pest problems as well as the occasional appearance of minor pest problems.

Effective management of a pest problem depends on:

- correct diagnosis of the problem and correct identification of the pest causing it.