

survey and eradication activities being conducted by the U.S. Department of Agriculture's (USDA's) Animal and Plant Health Inspection Service (APHIS) and the Pennsylvania Department of Agriculture (PDA).

#### Existing Compensation Regulations

Under the regulations in § 301.74–5 (referred to below as the regulations), owners of commercial stone fruit orchards and owners of fruit tree nurseries are eligible to receive compensation for losses associated with the destruction of trees in order to control plum pox and the prohibition on the movement or sale of nursery stock,

respectively, if the losses result from an action performed pursuant to an emergency action notification (EAN) issued by APHIS.

The regulations provide, among other things, that owners of commercial stone fruit orchards will be compensated on a per-acre basis at a rate based on the age of the trees destroyed and a 3-year prohibition on the replanting of host trees. The compensation to be paid by USDA is based on the loss in value of the destroyed orchard. The loss in value is calculated as the difference between the net present value (NPV) of the original (destroyed) orchard over a 25-year life cycle minus the NPV of the

replanted orchard for its entire productive life of 25 years. To calculate the NPV of an orchard (both original and replanted orchards), we used discounted cash flow analysis, which takes into account the quantity, variability, and duration of the forecasted income stream over a specified income projection period. Each year's net income is discounted back to a present worth figure at the appropriate, market-derived discount rate. The valuation model can be expressed in the following equation form, where Y = net income, r = discount rate, and n = number of years in the discount period:

$$NPV = \frac{Y_1}{(1+r)^1} + \frac{Y_2}{(1+r)^2} + \frac{Y_3}{(1+r)^3} + \dots + \frac{Y_n}{(1+r)^n}$$

To calculate NPV using the above equation, we had to determine net income, discount rate, and the number of years in the discount period. Each of these inputs is discussed below.

The rate of compensation to be paid by USDA is set at up to 85 percent of the difference in value between the destroyed and replacement orchards as

described above. The State of Pennsylvania has indicated that State funds will be used to make up the remaining difference in value. In no case will total USDA plus State compensation exceed 100 percent of the difference in value.

*Net income.* To determine per-acre net income, we multiplied the yield

(number of bushels) per acre by the price per bushel, then subtracted production costs. The estimation of net income is based on the 1995–1998 average Pennsylvania peach production, price, and yield data from the Pennsylvania Agricultural Statistics Service.

Year	Peach price (\$/bushel)	Yield (bushel/acre)	Income (\$ per acre)
1995 .....	13.65	275.9	3,766
1996 .....	16.50	254.5	4,199
1997 .....	16.85	254.5	4,288
1998 .....	15.85	236.4	3,747
1995–98 average .....	15.71	255.3	4,010

The calculation of the variable costs of production is based on the following estimates:

Type of cost	Year incurred	Costs
Land preparation .....	Year 0 .....	\$395 per acre.
Planting .....	Year 1 .....	\$1,303 per acre.
Orchard maintenance during preproductive year .....	Year 2 .....	\$222 per acre.
Orchard maintenance during productive years .....	Years 3–25 .....	\$899/year per acre.
Harvest cost .....	Years 4–25 .....	\$1.75 per bushel.

*Discount rate.* The discount rate used in the present value calculation is 12.5 percent, which is the risk-adjusted rate estimated to be appropriate in this situation.

*Number of years in discount period.* The NPV was calculated using a life cycle approach. The revenues and costs were calculated over a period equal to the expected productive life of a replanted orchard, which, as noted previously, is 25 years.

Using the information and methodology set forth in the preceding paragraphs, we arrived at the per-acre compensation rates set forth in § 301.74–5(b)(1) of the current regulations. The amounts of compensation for destroyed trees range from \$3,713 per acre for a 25-year-old block of trees to \$15,000 per acre for a 7-year-old block of trees. Finally, because compensation programs are intended, in part, to encourage the

prompt execution of measures deemed necessary to control or eradicate plant pests, § 301.74–5(b)(1) of the regulations provides that compensation payments will be reduced by 10 percent, plus any tree removal costs incurred by the State or USDA, if the trees subject to an EAN were not destroyed by the date specified on that order.

The existing regulations also: (1) Provide that owners of fruit tree nurseries will be compensated for up to