



**Figure 13.6.** Summary of the effects of various treatments on the formation and release of ajmalicine from *C. roseus*. G stands for growth medium and P for production medium. E indicates elicitor addition (2%) of an autoclaved culture of the fungus, *Phytophthora cactorum*, for a two-day exposure time; the neutral resin, amberlite XAD-7, indicates the addition of resin. Samples were analyzed 23 days after inoculation. (With permission, from M. Asada and M. L. Shuler, *Appl. Microbiol. Biotechnol.* 30:475, 481, 1989.)

**TABLE 13.4** Examples of Compounds Made in High Yields in Organ Culture But Not in Corresponding Callus or Suspension Culture

| Compound            | Plant                                   | Form of culture |
|---------------------|---|-----------------|
| Cardenolides        | <i>Digitalis lanata</i>                 | Somatic embryos |
| Digitoxin           | <i>Digitalis purpurea</i>               | Shoots          |
| Diosgenin           | <i>Dioscorea composita</i>              | Shoots          |
| Monoterpene         | <i>Pelargonium fragrans</i> (geranium)  | Shoots          |
| Morphinan alkaloids | <i>Papaver somniferum</i> (opium poppy) | Shoots          |
| $\beta$ -Peltatin   | <i>Linum flavum</i>                     | Roots           |
| Pyrethrins          | <i>Chrysanthemum cinerariaefolium</i>   | Shoots          |
| Scopolamine         | <i>Datura innoxia</i>                   | Roots           |
| Tropane alkaloids   | <i>Hyoscyamus niger</i>                 | Roots           |
| Valepotriates       | <i>Centranthus</i> sp.                  | Roots           |
| Withanolides        | <i>Withania somnifera</i>               | Shoots          |