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## *Ips typographus*



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### European spruce bark beetle, *Ips typographus*

*Ips typographus*, European spruce bark beetle (or eight-spined spruce bark beetle) is a serious insect of *Picea* (main host), *Abies*, *Larix* and *Pinus*. *Ips typographus* is found in Europe, Scandinavian region, northern Asia, Middle East, China, Korea, Japan and Russia.

### Pheromone for European spruce bark beetle, *Ips typographus*

Russell IPM manufactures and supplies pheromone lure, traps and complete monitoring systems for *Ips typographus*, European spruce bark beetle. Pheromone trap data give early warning of the infestation and also alert the user to before it becomes serious.

### Biology of *Ips typographus*

Males have 4 spines on the backend of each elytron (or 8 spines in total as these beetles have two elytra as do all beetles). Females look almost identical to males and for many years it was thought impossible to differentiate the sexes under the microscope without resorting to dissection of the genitals. It is possible to separate the sexes after some experience since males have a larger knob in the middle of the "face" than do females, and males have fewer (less dense) hairs on the pronotum than females. The pronotum is the area of the thorax just behind the head on the top of the body. This beetle, as many other so-called aggressive bark beetles, also introduces fungi that help paralyze the tree's ability to produce resin that is used by the tree to repel the beetles when they are trying to bore into the tree (John A. Byers, 2006).



### Nature of Damage

Males excavate a nuptial chamber and are joined by 1 to 4 females. Females construct egg galleries in the inner bark radiating outward from the nuptial chamber. Vertical egg galleries are 10 to 20 cm long (12.5 cm average) and are usually three-armed, but can be two armed or multi-branched. Approximately 50 eggs are laid on each side of the egg gallery. Larval galleries radiate at right angles to the egg gallery and become wider as the larvae grow. On standing trees, needles turn yellow-green to red-brown and the foliage drops within a few weeks. Signs of infestation include red-brown frass in bark crevices, numerous round exit holes approximately 2 to 3 mm in diameter, and small (dime sized) tubes of resin (pitch tubes) extruding from the bark. Adult beetles also carry a number of associated fungi such as *Ceratocystis polonica* (Siemaszko). This bluestain fungus is highly virulent and can kill healthy spruce trees. This fungus also stains the wood with blue streaks, which reduces its commercial value. The beetles must attack a standing tree in large numbers to insure that enough fungi are introduced to kill the tree before it can produce resin and repel / kill the beetles (According to Food Inspection Agency, Canada).

### Pheromone application guidelines

*The following notes are guidelines of general nature and meant to give the user a head start in implementing pheromone monitoring programme. Local conditions and practices can vary and can lead to customisation of the programme.*

### Trap selection

The **Delta trap**  is most sensitive trap to use for monitoring this insect. However, **Moth catcher**  may be used in dusty condition or in high moth population density. Do not re-use the trap to monitor different insects as this may lead to mixed catches.

### Trap density

Two traps per hectare ( 2 traps / ha) for small holdings and in field of uneven topography. One trap for every two hectares of large scale fields of homogenous lands.

### Trap position

Near the highest point of the plant using supporting posts approximately 1 meter high or higher if the crop is higher.

### **Trap data and interpretation**

Collect data weekly from the start of the flight of the overwintering generation.. During the height of the population more frequent reading may be needed. Decisions on pesticide application should not be taken solely on the trap catch data. Climatic and biological considerations should be taken in account.

### **Lures**

Lures can be changed every 4-6 weeks to get the most accurate results.

### **Lures handling**

Pheromone lures are very sensitive tool. They can be affected by exposure to elevated heat and direct sunshine. Direct touching by hand may cause cross contamination leading to mixed catches in the trap. Some contaminants such as Nicotine may have repellent effect reducing trap catch.

### **Lure Storage**

Cool dry place. Shelf life can vary from 3-36 months depending on the storage temperature. See Technical Data Sheet for further details.