



## Quick visual scouting of *Coccinella septempunctata* in wheat fields

### Method/protocol submitted by:

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### Objectives of the method/protocol:

Quantification of *C. septempunctata* in wheat fields.

### Brief description of the method/protocol:

Cereal crops are infested by various pests, notably aphids. Coccinellids are largely aphidophagous, so it can be useful to quantify their populations on crops to estimate their impact on aphids and other pests.

The quick scouting method presented here is aimed at quantifying the populations of adults of *Coccinella septempunctata*. It follows from the detailed counting method (see "Estimation of coccinellid populations by capture in wheat fields"). Please note that the calibration formula associated to the method is only valid for the adults of *C. septempunctata* and NOT for other life stages or species.

### Method/protocol:

- Observation unit:

The observation unit is a plot of 25 sqm, represented in the field by a square, 5m by 5m, which can be delimited by stakes

- Observation and counts of the insects:

The method consists in following the perimeter of the plot during 2 minutes and counting all the adults of *C. septempunctata* visible on the plants and (more rarely) on the soil. The number of adults observed is noted.

Be careful to respect the observation duration and the area of the observation plot, since the formula below is relevant only for these specific conditions.

- Estimation of the population number:

There is supposed to be no strong migration in the plot during the observations.

The linear relationship between the number of counted adults of *C. septempunctata* and the total population of adults of *C. septempunctata* in the 25 sqm plot is:



$$P = (a)0.640 + (b)7.159 * C$$

With:

P: total number of adults of *C. septempunctata* in the 25 sqm plot

C : number of adults of *C. septempunctata* observed during 2 minutes in the 25 sqm plot

variance of a : 0.116

variance of b : 0.164

This relationship was obtained on a study of 2\*192 experimental plots.

### **Possible uses of this method/protocol:**

Quantitative ecological studies, including plant protection topics.

### **Advantages / Disadvantages of the method/protocol:**

This method requires 2 minutes per plot. The duration is thus much shorter than for the detailed method (see "Estimation of coccinellid populations by capture in wheat fields"), but the information obtained is not as complete.

Early life stages of *C. septempunctata* cannot be taken into account in this method, since they are less mobile than the adults and often hidden.

The method is not destructive for the crop.

The observation should preferably not be carried out on windy days, since wind makes the counting of insects on the plants very difficult.

### **References or examples of studies carried out by using this method/protocol:**

Lapchin L. *et al.* (1987). Coccinellids (Coleoptera: Coccinellidae) and syrphids (Diptera: Syrphidae) as predators of aphids in cereal crops: a comparison of sampling methods. Can. Ent. 119: 815-822.

Iperti G. *et al.* (1988). Sequential sampling of adult *Coccinella septempunctata* L. in wheat field. Can. Ent. 120: 773-778