

## Characteristics of transmission by *Pentastiridius leporinus* (Hemiptera, Cixiidae) of a phytopathogenic bacterium-like organism closely related to bacterial endosymbionts of hemiptera

**Olivier Sémétey**, Biologie et écologie des Phytoplasmes INRA, BV 86510 - 21065 Dijon Cedex, France; semetey@epoisses.inra.fr

The disease of sugar beet known as the syndrome “basses richesses” (SBR) has repeatedly affected sugar beet crops in Burgundy and Jura regions of Eastern France since 1991. It causes a loss of root sugar content which can have dramatic economic consequences for growers and local sugar beet industry: in 1992 the loss of income was about 50 % over 1000 ha. On the basis of microscope observations and PCR diagnosis, the SBR disease of sugar beet has been associated with two uncultivable phloem-restricted organisms: a stolbur phytoplasma and a bacterium-like organism (BLO) (Gatineau et al. 2001; 2002). The BLO is the major etiological agent of SBR. It is a  $\gamma$ -3 proteobacteria phylogenetically related to endosymbionts of hemiptera (aphids, psyllids, whiteflies) (3).

SBR is transmitted by the cixiid planthopper *Pentastiridius leporinus* (Fig 1) with a high efficiency, i.e. 100% of transmission after an inoculation access period (IAP) of 1 hour. The univoltine insect species is rare in natural environment. It appears that the cropping system of sugar beet and the associated cultural rotation are ideal conditions for the species to complete its biological cycle and reach high populations.

**Fig 1.** Male *Pentastiridius leporinus* on a sugar beet leaf.



### References

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