A method for raising brown planthopper (BPH), *Nilaparvata lugens* (Stål)

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To get mass population of the BPH, a good method for raising BPH is needed. In this paper, a convenient method was recommended.

BPH population used in the experiment was provided by Jiangsu Acad of Agri Sci. Six raising BPH methods, i.e, with rice buds (RB), rice seedling (RS), seedling soilless cultured (SSC), mature rice (MR), and rice stem cultured in nutrient fluid (RSF) were compared. RB, RS, MR, and RSF were often used, but SSC was used seldom. The rice buds of SSC was catalyzed as follows: seeds were washed 2-3 times in water and then soaked in water at 50℃ for 2-3 min, then the water was emptied, and the seeds were placed in a basin and covered with wet towels under 35℃. Twenty-four hours later, the seeds were tiled on a plastic plate, which was placed in a transparent plastic bag and placed in the cultural box with 16 h /8 h (dark/light), under 20-25℃, 28 ± 1℃, and 30-35℃, respectively. When the seedlings were about 10-12 cm, it was used to raise BPH.

MR and RSF showed good raising effects, especially in survival rate of the 3rd to the 5th nymph, emergence rate, and next generation larvae per female, but both methods had disadvantages of long cycle to get the mature rice and mass manpower. In RB, RS, and SSC, SSC had significant advantages in survival rate of the 3rd to the 5th nymph and emergence rate.

Effects of different temperatures on SSC were showed in Table 2. Raising BPH under 20-25℃ had the best effect and had significant advantages in emergence rate and next generation larvae per female. Below 20℃, the seedlings were not hale and the effect was very bad.

SSC was good for raising BPH in laboratory and was convenient for the operation. The mass population of BPH could be gotten by using this method in winter when the climate condition was not good for planting rice in nature. □

Table 1. Influence of different methods on the development and reproduction of BPH (28 ± 1℃)[a].

Raising method	Survival rate of neonate to the 2nd nymph (%)	Survival rate of the 3rd to the 5th nymph(%)	Emergence rate (%)	Next generation larvae per female
RB	98.0 ± 0.7 a	85.7 ± 2.1 a	80.3 ± 5.7 a	173 ± 30 a
RS	91.5 ± 1.5 b	82.3 ± 3.4 a	77.6 ± 4.9 a	131 ± 24 a
SSC	94.2 ± 1.9 ab	97.3 ± 2.7 b	84.0 ± 3.9 b	167 ± 47 a
MR	87.9 ± 2.3 b	91.3 ± 1.7 c	93.2 ± 3.0 c	259 ± 47 b
RSF	92.7 ± 0.8 b	98.6 ± 0.5 b	94.2 ± 1.2 c	307 ± 28 c

[a] Data in each column followed by the same letter was not significant at 0.05 level.

Table 2. Influence of SSC under different temperatures on the development and reproduction of BPH[a].

Temperature (℃)	Survival rate of neonate to the 2nd nymph (%)	Survival rate of the 3rd to the 5th nymph (%)	Emergence rate (%)	Next generation larvae per female
20-25	94.4 ± 1.1 a	95.7 ± 1.4 a	90.7 ± 2.7 a	202 ± 31 a
28 ± 1	94.2 ± 1.9 a	97.3 ± 2.7 a	84.0 ± 3.9 b	167 ± 47 b
30-35	95.0 ± 2.1 a	83.5 ± 3.0 b	81.3 ± 4.1 b	150 ± 51 b

[a] Data in each column followed by the same letter was not significant at 0.05 level.

Special Rice in China

Songjiang-Bodao: It originated from Songjiang and Qingpu counties, Shanghai City. The grains were short and full of nourishment, brilliant and white in color, sticky in quality, and soft in taste.

Baike-Qimei: It grew in Dongguan, Nanhai, Zengcheng, Sanshui, and Huaxian counties, Guangdong Province, and Dongguan and Nanhai were the most suitable areas. The rice had the following characteristics: seedlings and panicles were even during the growing period; it had thin rice hull and high milled rice rate; and its grain was sturdy, white with oilylustre, and transparent; when cooked, the rice was fragrant and suitable to taste. It had the title of