

江苏省水稻秸秆资源量及其可收集量估算

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Estimation of Total and Collectable Amounts of Rice Straw in Jiangsu Province

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摘要

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摘要 以江苏省23个主要水稻品种为研究对象, 对不同品种类型、种植方式和单产水平的水稻进行取样调查, 分析不同生产条件下的水稻草谷比及不同留茬高度下的秸秆可收集量, 结合相关统计资料估算江苏水稻秸秆资源数量及可收集量。结果表明, 水稻草谷比在不同品种类型间差异较小(0.98~1.03), 不同种植方式(0.80~1.19)和不同单产水平(0.83~1.12)间差异较大; 在留茬高度为5、15、20和25cm时, 水稻秸秆可收集系数分别为0.815~0.868、0.668~0.732、0.600~0.669和0.533~0.618, 水稻秸秆可收集量分别为 $1352.16 \times 10^4 \sim 1458.09 \times 10^4$ 、 $1145.70 \times 10^4 \sim 1228.03 \times 10^4$ 、 $1043.20 \times 10^4 \sim 1121.52 \times 10^4$ 和 $951.37 \times 10^4 \sim 1021.30 \times 10^4$ t。估算得到2009年江苏省水稻秸秆资源(以干质量计)为 $1585.93 \times 10^4 \sim 1704.92 \times 10^4$ t, 比传统方法估算结果高2.45%~10.14%。江苏省水稻秸秆资源丰富, 可收集量主要受留茬高度和种植方式的影响。

关键词: 水稻 草谷比 秸秆资源 收集系数

Abstract: 23 rice cultivars (including 19 *Japonica* rice and 4 *Indica* rice) cultivated widely in Jiangsu Province were sampled and investigated for estimation of total straw yields and collectable amountsof the straw, separately, of the crops different in cultivation system and in yield target in combination with relevant statistical data. Results show that the differences in grain/straw ratio were relatively small between cultivars(0.98-1.03), but quite large between crops different in cultivation pattern(0.80-1.19) and in yield level (0.83-1.12). When the stubbles left in the field were 5, 10, 20, and 25 cm tall separately, the rice straw collectability coefficient was 0.815-0.868, 0.668-0.732, 0.600-0.669 and 0.533-0.618, respectively and the maximum amount of collectable straw was 1352.16×10^4 - 1458.09×10^4 , 1145.70×10^4 - 1228.13×10^4 , 1043.20×10^4 - 1121.52×10^4 and 951.37×10^4 - 1021.30×10^4 t, respectively. The rice straw (dry weight) resource of Jiangsu in 2009 was estimated at 158.93×10^4 - 1704.92×10^4 t, which was 2.45%-10.14% higher than the estimation using the conventional method. It is, therefore, concluded that the rice straw resource of Jiangsu Province is rich, but the amount of collectable rice straw is mainly affected by how tall the stubbles are left in the field and how the crop is cultivated.

Keywords: rice ratio of straw to grain straw resource collectable coefficient

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