

Soybean and Hedgerow

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Abstract: Below-ground for nutrients and water can be clue to the cause of the reduction of crops yields. Root interaction plays on important role in estimating the effect of below-ground competition. However, little information has been known about these hedgerows-crops interaction in contour hedgerow agroforestry. Pot experiments were conducted to study the effect of root contact on N absorption and transfer in purple soil of two hedges-soybean intercropping systems with two different methods of ¹⁵N foliar-feeding and ¹⁵N soil labeling methods, along with root partition, i.e, a sheet barrier treatment, a mesh barrier, and no barrier treatment. Results showed that the growth of *Amorpha fruticosa* was suppressed without root barrier, leading to lower biomass and N acquisition than those with mesh and sheet barrier; the biomass and N acquisition of *Vertiveria zizanioides* and soybean without root barrier were the highest in *Vertiver* intercropping system. The ¹⁵N abundance is higher in soybean and *A.futisoca* with mesh barrier, but ¹⁵N abundance is higher in *Vertiver* without root barrier, which suggested that the *Vertiver* is a stronger competitor in *Vertiver* / soybean intercropping system. N transfer from soybean to hedge species was obvious using ¹⁵N direct labeling methods, which suggested that competition between of *A. futisoca* or *Vertiver* for nitrogen fertilizer was stronger. Interspecific inhibition did exist in *A. futisoca*-soybean intercropping, and the growth of *A.futisoca* and soybean were suppressed; the complementary nitrogen use did exist in *Vertiver*-soybean intercropping, and both competition and facilitation occurred in *Vertiver*-soybean intercropping which enhanced the growth of *Vertiver* and soybean.

Key words: hedge; soybean; intercrops; root; nitrogen; ¹⁵N

4 Influence of *Veliveria zizanioides*, Alfalfa and Clover on Soil Saliniazation

QIU Qing-hua et al (Yili Normal College, Yining, Xinjiang 835002)

Abstract The research aimed to contrast the ability of the salinity absorbancy of *Veliveria zizanioides*, alfalfa and clover from the soil. [Method] *Veliveria zizanioides*, alfalfa and clover that grew in the same soil were irrigated regularly with the different rank NaCl solution or K₂CO₃ solution. The observation was carried out for five months. The introduction survival rate, the minute tiller rate, the biomass accumulates rate and the salt content in adult plant of *Veliveria zizanioides*, alfalfa and clover were analyzed. And the salinity quality and ability were contrasted. [Result] The salinity absorbancies of *Veliveria zizanioides* and alfalfa from the soil were strong. And that of alfalfa was stronger than that of *Veliveria zizanioides*, but the salinity absorbancy of clover from the soil was weak. [Conclusion] The salinity absorbancy of *Veliveria zizanioides*, alfalfa and clover from soil was related with the salinity content of soil, and the salinity absorption from soil was selective.

Key words *Veliveria zizanioides*; Alfalfa; Clover; Salinity

5 Study on Ablity of Soil Saliniazation Degradation of *Veliveria zizanioides*, Alfalfa and Clover

DENG Shao-yun et al

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Abstract The research aimed to study the ability of soil saliniazation degraatlation of *Veliveria zizanioides*, alfalfa and clover. [Method] The different rank NaCl solution or K₂SO₄ solution was irrigated to cultivate *Veliveria zizanioides*, alfalfa and clover that had grown in the same soil. The statistical analysis was made on *Veliveria zizanioides* survival rate and minute tiller rate and the biomass accumulates rate and salt content in adult plant of *Veliveria zizanioides*, alfalfa, clover, and the salt's reduction of the soil. And the quality and ability of the introduction cultivated *Veliveria zizanioides*, alfalfa and clover absorbing and degrading the salt in the soil were determined. [Result] The salinity degradation of *Veliveria zizanioides*, alfalfa from the soil was strong, and that of alfalfa was stronger than that of *Veliveria zizanioides*, but the salinity degradation of clover from the soil was

weak. [Conclusion] The salinity degradation of *Veliveria zizanioides*, alfalfa and clover from soil was related with the salt content of soil, and the salinity degradation of *Veliveria zizanioides*, alfalfa and clover was selective.

Key words *Veliveria zizanioides*; Alfalfa; Clover; Salinization degradatio

6 Main Effect and Consideration on Soil and Water Conservation Monitoring of Hu'nan Province

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Abstract: The paper summarized the effect of soil and water conservation monitoring achieved by Hu'nan in recent years and elaborated the existing problems of disunity of positioning of soil and water conservation monitoring agency, unreasonable layout of monitoring sites and not standard soil and water conservation monitoring in development projects in addition to deficient certification system of monitoring results and difficult implementation of monitoring funds. It puts forward the development consideration for the next step of soil and water conservation monitoring of Hu'nan Province, i. e. to make clear direction of development and further strengthen the monitoring team building; to prepare monitoring plans and make steady progress of soil and water conservation monitoring; to finalize working funds and ensure the soil and water conservation monitoring on the rail; to perfect the monitoring network and optimize the layout of monitoring sites and to establish evaluation index system and standardize soil and water conservation monitoring.

Key words: soil and water conservation monitoring; problems; consideration; Hu'nan Province

7 Study on Restoring and Amelioration Function of *Vetiveria zizanioides* on Salt or Alkaloid Soil

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Abstract: *Vetiveria zizanioides* was used as test material, through artificially compounding soil with NaCl solution or the K_2CO_3 solution in certain density, the author of this article had made the statistical analysis of the survival rate and minute tiller rate and biomass accumulates rate of *Vetiveria zizanioides*, and of the salt content of in soil or in adult plant of *Vetiveria zizanioides*, and had further calculated the salinity quality in the cultivated *Vetiveria zizanioides* by absorbed from soil, and the ability of that the cultivated *Vetiveria zizanioides* absorbs salt and alkali from soil, and the quality of NaCl or K_2CO_3 reduced in the soil. The results indicated that the saline absorbancy of *Vetiveria zizanioides* from the soil was strong, and the absorbancy of NaCl was more strong than the absorbancy of K_2CO_3 for the *Vetiveria zizanioides* from the soil, but as for the reduction of salt and alkali in soil, the reduction of K_2CO_3 was more easy than NaCl. And *Vetiveria zizanioides* be regarded that had function of restoring and ameliorating salt or alkaloid soil in certain degree.

Key words: *Vetiveria zizanioides*; salt or alkaloid soil; restore and ameliorate; study

8 Experimental Study on *Veliveria Zizanioides* Degrading Soil Saliniazation

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(Yili Normal College, Yining 835000, China)

Abstract: With the different rank NaCl solution or the K_2CO_3 solution regular quota irrigation introduction cultivation *Veliveria zizanioides*, the author of this article had done three month experimental study observation, and had made the statistical analysis *Veliveria zizanioides*'s the introduction survival rate and Minute tiller rate and biomass accumulates rate salt content in adult plant of *Veliveria zizanioides*, and further determined has calculated in the introduction cultivated *Veliveria zizanioides* absorption soil the salinity quality and ability. The experimental study indicated that the salinity absorbancy of *Veliveria zizanioides* from the soil is strong, the *Veliveria zizanioides*

be regarded that the salinity absorbancy from soil is relate with the salt content of soil, and simultaneously, the salinity absorption from soil of *Veliveria zizanioides* is selective. In the end of this article, the author had pointed out further studies direction and forecast.

Key words: *Veliveria zizanioides*; soil salinization; degrade