Abstract
A trial for ethanol fermentation from mixed cane juices at commercial scale was carried out in the facilities of the distillery near to sugar enterprise Heriberto Duquesne in Villa Clara. The most affecting factors in process efficiency were fermentation temperature and sugar concentration in initial broth. It was demonstrated that temperature values about 35 ± 1°C are optimal to obtain efficiency values of 85% and ethanol productivities of 2.5 Lm-3h-1, provided that fed sugar concentration be from 105 to 115 kgm-3. The technological arrangement chosen allows the derivation of juices with lower quality, as filter mud juices, to ethanol production which confers a great flexibility to the installation. The use of cane juices, the control of temperature and the application of yeast with a higher specificity foster the development of significant increases in efficiency without important investment in the distillery. Distillery slops coming from distillation present organic load values 30-40% lower than their homologues from molasses.

Keywords
Fermentation, ethanol, alternative energy, sugarcane, cane juices.