SENSORY PROFILE OF A SPIRIT OBTAINED BY FERMENTATION OF *A. americana* L. HONEY AND PANELA MUSTS USING A NATIVE YEAST STRAIN

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Introduction. "Comiteco" is a spirit produced in Chiapas by fermentation of *Agave americana* L. honey and panela musts. It is well known that native yeast plays an important role in the formation of aroma compounds in spirits (1), which determines many organoleptics characteristics of alcoholic beverages (2). In a previous work, a wild yeast strain was isolated from juice of *A. americana* L. and selected by osmotolerant capacity, ethanol tolerance and killer phenotypic. This strain was called A3. The aim of this work was to determinate the "comiteco" sensory profile using A3 strain.

Methods. A3 strain was used to evaluate the composition must using three different ratio of *A. americana* L. juice 22° Brix and sugar cane juice 22 ° Brix (60:40, 65:35 and 70:30). Musts were fermented at 30°C during 24, 48 and 72 h. Ethanol production was determinate by electronic densimeter, volatile compounds through CG-MS and consumed substrate were analyzed by HPLC-IR. The musts were distilled in Corning equipment and distilled was adjusted at 35° G.L. using deionized water (3). The selection of best must for fermentation was realized through a tasting of its distilled respectives. In the last stage, the selected distilled was restful with white oak (20 g/L spirit) for two months. A descriptive sensory evaluation was carried out to compare the sensory profile between the white and restful distilled. That analysis was carried out by 4 panelists trained. The flavors were assessed on a scale of 1-5 (4).

Results. The results shown that there are not a difference significantly ($p<0.05$) between treatments for ethanol production, substrate conversion efficiency (%) and aromatic composition in distilled. Values between 25 and 28 g/L for ethanol production and 83 and 89% for substrate conversion efficiency were obtained. The table 1 shows a great variety of aromatic compounds as highest alcohols and esters. These compounds are responsible of sensory profile of beverages (5).
Table 2 shows that distilled with more acceptation was 65:35 at 48 hours of fermentation. For that, this distilled was restful during 2 months and after, white distilled and restful were both subjected to sensory profile. The Fig. 1 shows the sensory profile in a scale 0.0 – 5.0 of white and restful spirit obtained in descriptive sensory analysis.

Table 1. Other aromatic compounds in distilled in addition to ethanol

Compound (%)	60:40-48h	65:35-48h	70:30-72h
Acetaldehyde	0.59	0.12	0.36
Etil acetate	0.34	0.08	0.20
1-propanol	0.86	0.14	0.53
2-metilpropanol	0.26	0.017	0
3-metilbutanol	0.99	0.16	1.49
Acetal	0.34	0.074	0.08
1-pentanol	0.15	0	0

Table 2. Distilled evaluated in tasting

Analysis	60:40-48h	65:35-48h	70:30-72h
Visual phase	3.5 [a]	3.25 [a]	3.25 [a]
Olfactory phase	4.25 [a]	7.25 [b]	6.5 [b]
Gustative phase	3.75 [a]	4.75 [b]	3.25 [a]

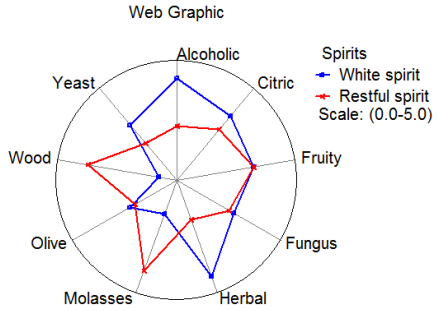

Fig. 1. Sensory profile of white and restful spirits

Conclusions. A3 can be used to produce a spirits. Highest alcohols and esters are the volatile compounds principals produced by this strain. Musts composition and fermentation time affect the spirits aroma. The restful with white oak changes the aroma intensity in the distilled.

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