



Fig. 4. Assessment of potential odour impact with reference to Ios and correlation with monitored odour concentration

Referring, finally, to existing study of correlation between the odour concentration, expressed in OU, with the Ios (Montemarano, 2010) and plotting the values, of this case study, of total concentrations of odour and the total reported Ios to those at each point for each sampling, it can be concluded that the impact from odour reaches the mean values and the Figure 4 show it. This band is one of five already defined in the work mentioned above, in which, as the range of IOS includes values between 0 and 20, the odor impact of an urbanized area has been divided into five classes: in the first negligible impact is defined, Ios = 0-4, in the second impact is low, Ios = 5-8, in the third impact is low, Ios = 9-12; in the fourth impact is high, Ios = 13-16; the last band is the one with a strong impact, Ios = 17-20.

IV. CONCLUSIONS

This study led to results that show the potential of the proposed methodology, based on sensory analysis and on dynamic olfactometry, applied in the town in the station area. The urbanized study area was identified from a geographical point of view, finding in it the main activities that produce odorous substances and any sensitive targets at which a preliminary survey was made to measure the perception of any discomfort of population. Subsequently, sensory studies on field and sampling of air were made, at several points from September to December, and then laboratory testing were made. Throughout the period of investigation and evaluation, the collection of the meteorological data was made because the climate directly affect the dispersion of odors. The data obtained from surveys carried out on site were examined and they allowed the development of an index of sensory odor, Ios. The results of surveys conducted on a sample of 300 individuals in adulthood and both sexes, compared with the data obtained from laboratory testing, revealed the correspondence between the different types of results.

The implementation of this procedure to assess the impact of odors to input in urban areas made possible, then, to get effective results in line with the proposed target. It was found that this actually there is the impact of odors in the area of the town. As assumed we have been able to verify that the main

source of emissions is Tobacco Factory. The correlation between concentration and odor sensory index was significant and, as regards the influence of temperature and humidity index of sensory odor, it was negligible. This new methodology, inspired by the efficiency of field inspection and combining it with the dynamic olfactometry, has achieved these results in a shorter time and lower costs. In this context it is likely the opportunity to continue the future experiment even better to refine its application or to proceed with the same strategy over a longer period of observation, or otherwise evaluating the odour emissions in the same monitoring area for later comparison with results by odour input achieved so far. You can see, finally, that the scientific approach and experimental is helpful to ensure the detection of odours and its quantitative characterization. With an action to monitoring and verification of the potential impacts of odor to input on urbanized study area, in fact, is possible to provide a useful and reliable analysis tool to institutions responsible for management and control of territory and to civil users in the analysis and in the resolution of disputes under this theme.

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