In Pakistan, oxytocin is being used extensively in buffalo for milk let down when young ones is weaned or died. Presently, exogenous oxytocin injection is a major substitute of calf to get milk from buffalo. There is a great public concern in country about usage of oxytocin treated milk. To report this issue, a study was designed to know the effect of oxytocin on milk production, somatic cell count (SCC) and milk contents in Nili-Ravi buffalo. Four this purpose, 24 freshly calved buffaloes were selected randomly at Buffalo Research Institute Pattoki Pakistan. Oxytocin was injected twice daily at Morning and Evening prior to milking in each treatment groups @ 10 and 30 IU/IM while control was given normal saline IM for 22 weeks. Milk production was recorded at the time of milking. Milk samples (n=528) were collected @ 50 ml and analysed for its contents with Lactoscan on weekly basis while SCC was estimated through CMT qualitatively (n=240) and later on confirmed by Porta somatic cell kits quantitatively on fortnightly basis. Results revealed that milk production was increased (P<0.05) in higher dose 30IU as compared to control and 10IU. Almost 3-10% increase in milk production overall. Among the milk contents: fat% and pH, was increased (P<0.05) in the peak dose 30IU with respect to control and 10IU while other contents: Lactose, solids and freeze point were similar in all the three groups. However, density was significantly (P<0.05) lower in higher dose group as compared to 10IU and control. Similarly, protein was significantly higher in 10IU as compared to control and 30IU. So for SCC, they were below the limit which was considered as unfit for human consumption in all three groups and was not higher (P>0.05) at fortnightly and monthly basis analysis. It was concluded that oxytocin had significantly increased milk production. Further, it was confirmed that it had positive effect to increase fat% considerably but at same time, it had unpleasantly change the taste of milk due to significantly high pH at supraphysiological dose. Furthermore, it had minimum effect on SCC.