## Appendix 2

## Crosstabulation tables for distribution of $\mathbf{3 8 8}$ sheep examined for brucellos

according to potential risk factors

|  |  | governorate |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Umdurman | Khartoum north | Khartoum |  |
| negative | Count <br> \% within governorate | $\begin{gathered} 92 \\ 92 / 94 * 100=97.9 \% \end{gathered}$ | $\begin{gathered} 238 \\ 238 / 244 * 100 \\ =97.5 \% \end{gathered}$ | $\begin{gathered} 48 \\ 48 / 50 * 100 \\ =96.0 \% \end{gathered}$ |  |
| positive | Count \% within governorate | $\begin{gathered} 2 \\ 2 / 94 * 100=2.1 \% \end{gathered}$ | $\begin{gathered} \hline 6 \\ 6 / 244 * 100 \\ =2.5 \% \end{gathered}$ | $\begin{gathered} \hline 2 \\ 2 / 50 * 100 \\ =4.0 \% \end{gathered}$ |  |
| Total | Count \% within governorate | $\begin{gathered} 94 \\ 94 / 94 * 100 \\ =100.0 \% \end{gathered}$ | $\begin{gathered} \hline 244 \\ 244 / 244 * 100 \\ =100.0 \% \end{gathered}$ | $\begin{gathered} \hline 50 \\ 50 / 50^{*} 100 \\ =100.0 \% \end{gathered}$ |  |


$\left.$|  |  | locality |  |  |  |  |
| :--- | :--- | :---: | :---: | :---: | :---: | :---: |
|  |  | Bahary | Umbeda | Karary | Sharg elneel | Jabal awlia |
| negative | Count | 85 | 10 | 82 | 153 | 48 |
|  | \% within |  |  |  |  |  |
| locality |  |  |  |  |  |  | | $85 / 85^{*} 100$ |
| :---: | :--- | :---: |
| $=100.0 \%$ | | $10 / 10^{*} 100$ |
| :---: |
| $=100.0 \%$ | | $82 / 84^{*} 100$ |
| :---: |
| $=97.6 \%$ | | $153 / 159 * 10$ |
| :---: |
| $0=96.2 \%$ | | $48 / 50^{*} 100$ |
| :---: |
| $=96.0 \%$ | \right\rvert\,


|  |  | occupation |  |  |
| :--- | :---: | :---: | :---: | :---: |
|  | governorate officer | trader | farmer |  |
| negative | Count <br> \% within <br> occupation | 84 | 127 <br> $127 / 129 * 100$ <br> $=98.4 \%$ | $167 / 173 * 100$ <br> $=96.5 \%$ |
| positive | Count <br> \% within <br> occupation | $2 / 86 * 100=2.3 \%$ | $2 / 100=97.7 \%$ | $2 / 129 * 100=1.6 \%$ | | $6 / 173 * 100=3.5 \%$ |
| :---: |


|  |  | education |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | khalwa | high secondary | primery | univercity | illiterate |
| negative | Count <br> $\%$ within education | $\begin{gathered} 99 \\ 99 / 104 * 100 \\ =95.2 \% \end{gathered}$ | $\begin{gathered} 64 \\ 64 / 64 * 100 \\ =100.0 \% \end{gathered}$ | $\begin{gathered} 91 \\ 91 / 92 * 100 \\ =98.9 \% \end{gathered}$ | $\begin{gathered} 108 \\ 108 / 112 * 100 \\ =96.4 \% \end{gathered}$ | $\begin{array}{\|c\|} \hline 16 \\ 16 / 16 * 10 \\ 100.0 \% \\ \hline \end{array}$ |
| positive | Count $\%$ within education | $\begin{gathered} \hline 5 \\ 5 / 104 * 100 \\ =4.8 \% \end{gathered}$ | $\begin{gathered} \hline 0 \\ 0 / 64 * 100 \\ =.0 \% \end{gathered}$ | $\begin{gathered} \hline 1 \\ 1 / 92 * 100 \\ =1.1 \% \end{gathered}$ | $\begin{gathered} \hline 4 \\ 4 / 112 * 100 \\ =3.6 \% \end{gathered}$ | $\begin{gathered} \hline 0 \\ 0 / 16^{*} 10 \\ =.0 \% \end{gathered}$ |
| Total | Count <br> \% within education | $\begin{array}{\|c\|} \hline 104 \\ 104 / 104 * 100 \\ =100.0 \% \end{array}$ | $\begin{gathered} 64 \\ 64 / 64 * 100 \\ =100.0 \% \end{gathered}$ | $\begin{gathered} \hline 92 \\ 92 / 92 * 100 \\ 100.0 \% \end{gathered}$ | $\begin{gathered} 112 \\ 112 / 112 * 100 \\ =100.0 \% \end{gathered}$ | $\begin{gathered} 16 \\ 16 / 16^{*} 10 \\ =100.0 \% \end{gathered}$ |


|  | age |  |  |  |
| ---: | :---: | :---: | :---: | :---: |
|  | $<2$ year | $2 \_4$ year | $>4$ year |  |
| Count <br> $\%$ within age | 119 | 163 | 96 |  |
|  | $119 / 121 * 100=98.3 \%$ | $163 / 168 * 100=97.0 \%$ | $96 / 99 * 100=97.0 \%$ | 37 |
| Count | 2 | 5 | 3 |  |
| $\%$ within age | $2 / 121 * 100=1.7 \%$ | $5 / 168 * 100=3.0 \%$ | $3 / 99 * 100=3.0 \%$ | $10 / 38$ |
| TotalCount <br> $\%$ within age <br> $121 / 121 * 100=100.0 \%$ | $168 / 168=100.0 \%$ | $99 / 99 * 100=100.0 \%$ | $388 / 3$ |  |


|  | sex |  | Total |
| :---: | :---: | :---: | :---: |
|  | female |  |  |


|  | type of herd |  |
| :--- | :--- | :--- |
|  | mixed | pure |


| negativ <br> e Count <br> \% within type of <br> herd | 305 | 73 | 378 <br> $378 / 388 * 100$ <br> $=97.4 \%$ |
| :--- | :---: | :---: | :---: |
| positive Count |  |  |  |
| \% within type of <br> herd | 8 | $25 / 313 * 100=97.4 \%$ | $73 / 75 * 100=97.3 \%$ | | 10 |
| :---: |
| TotalCount <br> $\%$ within type of <br> herd |


|  |  | breed source |  |  |
| :--- | :--- | :---: | :---: | :---: | :---: |
|  | within farm | local market | cross |  |
| negative | $\begin{array}{l}\text { Count } \\ \text { \% within breed } \\ \text { source }\end{array}$ | 12 | $\begin{array}{c}343 \\ 343 / 351 * 100 \\ =97.7 \%\end{array}$ | $23 / 25 * 100=92.0 \%$ |$\} 37$


|  | yes | no |  |  |
| :--- | :--- | :---: | :---: | ---: |
| negativeCount <br> \% within know <br> brucellosis | 248 | 130 | 378 |  |
| positive | Count <br> \% within know <br> brucellosis | $648 / 254 * 100=97.6 \%$ | $130 / 134 * 100=97.0 \%$ | $378 / 388 * 100$ |
| Total | Count <br> \% within know <br> brucellosis | $6 / 254 * 100=2.4 \%$ | $4 / 134 * 100=3.0 \%$ | $10 / 388 * 100$ |


|  |  |  | abortion cases |  | T |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | no | yes |  |
|  | negative | Count <br> $\%$ within abortion cases | $\begin{gathered} 194 \\ 194 / 195 * 100=99.5 \% \end{gathered}$ | $\begin{gathered} 184 \\ 184 / 193 * 100=95.3 \% \end{gathered}$ | 378/388* |
|  | positive | Count <br> $\%$ within abortion cases | $\begin{gathered} 1 \\ 1 / 195 * 100=.5 \% \end{gathered}$ | $\begin{gathered} 9 \\ 9 / 193 * 100=4.7 \% \end{gathered}$ | 10/388* |
| Total |  | Count <br> $\%$ within abortion cases | $\begin{gathered} 195 \\ 195 / 159 * 100=100.0 \% \end{gathered}$ | $\begin{gathered} 193 \\ 193 / 193 * 100=100.0 \% \end{gathered}$ | 388/388*1 |


|  | from market | grazing land | cut it from the farm |
| :---: | :---: | :---: | :---: |
| negative Count <br> $\%$ within source of green fodder | $\begin{gathered} 111 \\ 111 / 111 * 100 \\ =100.0 \% \end{gathered}$ | $\begin{gathered} 212 \\ 212 / 219 * 100 \\ =96.8 \% \end{gathered}$ | $\begin{gathered} 55 \\ 55 / 58 * 100 \\ =94.8 \% \end{gathered}$ |
| positive Count <br> $\%$ within source of green fodder | $\begin{gathered} 0 \\ 0 / 111 * 100.0 \% \end{gathered}$ | $\begin{gathered} 7 \\ 7 / 219 * 100=3.2 \% \end{gathered}$ | $\begin{gathered} 3 \\ 3 / 58 * 100=5.2 \% \end{gathered}$ |
| Total Count <br>  \% within source of <br>  green fodder | 111 $111 / 111 * 100$ $=100.0 \%$ | $\begin{gathered} 219 \\ 219 / 219 * 100 \\ =100.0 \% \end{gathered}$ | $\begin{gathered} 58 \\ 58 / 58 * 100 \\ =100.0 \% \end{gathered}$ |


|  |  | water source |  |  | $T$ |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | wells | common canal | tape water |  |
| negative | Count <br> \% within water source | $\begin{gathered} 128 \\ 128 / 12 / * 100 \\ =100.0 \% \end{gathered}$ | $\begin{gathered} 204 \\ 204 / 212 * 100 \\ =96.2 \% \end{gathered}$ | $\begin{gathered} 46 \\ 46 / 48^{*} 100 \\ =95.8 \% \end{gathered}$ | $378 /$ $=9$ |
| positive | Count <br> \% within water source | $\begin{gathered} 0 \\ 0 / 128 * 100=.0 \% \end{gathered}$ | $8 / 212 * 100=3.8 \%$ | $\begin{gathered} 2 \\ 2 / 48 * 100=4.2 \% \end{gathered}$ | 10/3 |
| Total | Count <br> \% within water source | $\begin{gathered} \hline 128 \\ 128 / 128 * 100 \\ =100.0 \% \end{gathered}$ | $\begin{gathered} \hline 212 \\ 212 / 212 * 100 \\ =100.0 \% \end{gathered}$ | $\begin{gathered} \hline 48 \\ 48 / 48 * 100 \\ =100.0 \% \end{gathered}$ | $388 /$ $=1$ |


|  |  |  | herd size |  | To |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | small | large |  |
|  | negative | Count <br> \% within herd size | $\begin{gathered} 305 \\ 305 / 312 * 100=97.8 \% \end{gathered}$ | $73$ <br> $73 / 76 * 100=96.1 \%$ | 378/388*1 |
|  | positive | Count <br> \% within herd size | $\begin{gathered} 7 \\ 7 / 212 * 100=2.2 \% \end{gathered}$ | $\begin{gathered} 3 \\ 3 / 76 * 100=3.9 \% \end{gathered}$ | 10/388*1 |
| Total |  | Count <br> $\%$ within herd size | $\begin{gathered} 312 \\ 312 / 312 * 100=100.0 \% \end{gathered}$ | $\begin{gathered} \hline 76 \\ 76 / 76 * 100=100.0 \% \end{gathered}$ | 38 $388 / 38$ $=100$ |

