



Supplementary Material

Estimation of Honey Production in Beekeeping Enterprises from Eastern Part of Turkey through Some Data Mining Algorithms

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Supplementary Table I.- Results of MARS algorithm in predicting honey yield per hive.

Basic functions	Coefficients
Intercept	8.540
EDUEL4	-2.124
MEMBERSHIPNONMEMBER	-9.881
max(0, AGE-48)	7.103
max(0, AGE-49)	-20.114
max(0, AGE-50)	14.897
max(0, AGE-55)	-5.121
max(0, AGE-58)	5.488
max(0, AGE-60)	-2.466
max(0, 70-NFB)	0.388
max(0, NFB-70)	6.209
max(0, NFB-75)	-11.819
max(0, NFB-80)	6.060
MEMBERSHIPNONMEMBER * RACEOTHERS	13.478
ProvinceKARS * max(0, NFB-70)	-0.359
ProvinceKARS * max(0, NFB-60)	0.337
max(0, 60-AGE) * EDUEL3	1.410
max(0, 60-AGE) * OTHERWORKSYES	1.499
EDUEL2 * max(0, 70-NFB)	0.670
OTHERWORKSYES * max(0, 70-NFB)	-0.221
max(0, NFB-50) * RACEOTHERS	-0.025
max(0, NFB-50) * QUEENUPTO2	0.020
max(0, 45-AGE) * max(0, NFB-50)	0.047
max(0, 46-AGE) * max(0, NFB-80)	0.052
max(0, AGE-46) * max(0, NFB-80)	-0.323
max(0, AGE-47) * max(0, NFB-70)	0.359
max(0, AGE-48) * max(0, NFB-70)	-1.202

Basic functions	Coefficients
$\max(0, \text{AGE}-48) * \max(0, \text{NFB}-75)$	0.859
$\max(0, 49-\text{AGE}) * \max(0, \text{NFB}-60)$	-0.086
$\max(0, \text{AGE}-49) * \max(0, \text{NFB}-70)$	0.775
$\max(0, \text{AGE}-49) * \max(0, \text{NFB}-60)$	-0.167
$\max(0, \text{AGE}-50) * \max(0, \text{NFB}-70)$	-0.427
$\max(0, \text{AGE}-50) * \max(0, \text{NFB}-50)$	0.076
$\max(0, \text{AGE}-52) * \max(0, \text{NFB}-70)$	0.203
$\max(0, \text{AGE}-52) * \max(0, \text{NFB}-80)$	-0.156
$\max(0, 60-\text{AGE}) * \max(0, \text{NFB}-250)$	0.052
$\max(0, 60-\text{AGE}) * \max(0, \text{NFB}-200)$	-0.056
ProvinceERZ * $\max(0, 60-\text{AGE}) * \text{OTHERWORKSYES}$	0.847
ProvinceERZ * EDUEL2 * $\max(0, 70-\text{NFB})$	-0.497
ProvinceKARS * $\max(0, 60-\text{AGE}) * \text{EDUEL3}$	-0.331
ProvinceKARS * $\max(0, 60-\text{AGE}) * \text{OTHERWORKSYES}$	0.590
ProvinceKARS * $\max(0, 60-\text{AGE}) * \text{QUEENUPTO2}$	-0.206
$\max(0, 60-\text{AGE}) * \text{EDUEL2} * \text{OTHERWORKSYES}$	1.234
$\max(0, 60-\text{AGE}) * \text{EDUEL4} * \text{OTHERWORKSYES}$	2.051
ProvinceERZ * $\max(0, 60-\text{AGE}) * \max(0, \text{NFB}-200)$	-0.005
ProvinceERZ * $\max(0, \text{AGE}-48) * \max(0, \text{NFB}-70)$	-0.002
$\max(0, \text{AGE}-44) * \text{EDUEL2} * \max(0, \text{NFB}-70)$	0.068
$\max(0, \text{AGE}-47) * \text{EDUEL2} * \max(0, \text{NFB}-70)$	-0.176
$\max(0, \text{AGE}-49) * \text{EDUEL2} * \max(0, \text{NFB}-70)$	0.106
$\max(0, \text{AGE}-50) * \text{EDUEL3} * \max(0, \text{NFB}-70)$	-0.004
$\max(0, 60-\text{AGE}) * \text{EDUEL3} * \max(0, 250-\text{NFB})$	-0.008
$\max(0, 60-\text{AGE}) * \text{MEMBERSHIPNONMEMBER} * \max(0, \text{NFB}-250)$	0.009
$\max(0, 60-\text{AGE}) * \text{OTHERWORKSYES} * \max(0, 200-\text{NFB})$	0.039
$\max(0, 60-\text{AGE}) * \text{OTHERWORKSYES} * \max(0, 250-\text{NFB})$	-0.037
$\max(0, 60-\text{AGE}) * \text{OTHERWORKSYES} * \max(0, \text{NFB}-100)$	-0.021
$\max(0, 60-\text{AGE}) * \text{OTHERWORKSYES} * \max(0, \text{NFB}-180)$	0.016
$\max(0, \text{AGE}-52) * \max(0, \text{NFB}-70) * \text{RACEOTHERS}$	0.005
$\max(0, 60-\text{AGE}) * \max(0, \text{NFB}-250) * \text{RACEOTHERS}$	0.006
ProvinceERZ * $\max(0, 60-\text{AGE}) * \text{EDUEL4} * \max(0, \text{NFB}-200)$	-0.042
ProvinceERZ * $\max(0, 60-\text{AGE}) * \text{OTHERWORKSYES} * \max(0, 200-\text{NFB})$	-0.005
$\max(0, 60-\text{AGE}) * \text{EDUEL2} * \text{OTHERWORKSYES} * \max(0, 200-\text{NFB})$	-0.013
$\max(0, 60-\text{AGE}) * \text{EDUEL4} * \text{OTHERWORKSYES} * \max(0, 200-\text{NFB})$	-0.014
$\max(0, 60-\text{AGE}) * \text{EDUEL4} * \text{OTHERWORKSYES} * \max(0, \text{NFB}-100)$	-0.016
$\max(0, 60-\text{AGE}) * \text{EDUEL4} * \text{OTHERWORKSYES} * \max(0, \text{NFB}-180)$	0.015
$\max(0, 60-\text{AGE}) * \text{EDUEL4} * \max(0, \text{NFB}-250) * \text{RACEOTHERS}$	0.055
$\max(0, 60-\text{AGE}) * \text{MEMBERSHIPNONMEMBER} * \text{OTHERWORKSYES} * \max(0, 200-\text{NFB})$	0.006
ProvinceERZ * $\max(0, 60-\text{AGE}) * \text{EDUEL2} * \text{OTHERWORKSYES} * \max(0, 200-\text{NFB})$	-0.008
ProvinceERZ * $\max(0, 60-\text{AGE}) * \text{MEMBERSHIPNONMEMBER} * \text{OTHERWORKSYES} * \max(0, 200-\text{NFB})$	-0.011
ProvinceERZ * $\max(0, 60-\text{AGE}) * \text{OTHERWORKSYES} * \max(0, 200-\text{NFB}) * \text{RACEOTHERS}$	0.008
$\max(0, 60-\text{AGE}) * \text{EDUEL4} * \text{OTHERWORKSYES} * \max(0, 200-\text{NFB}) * \text{RACEOTHERS}$	-0.007