

Table 4 Normalized matrix Z

Planting areas	Variety	Yield (kg/hm ²)	Proportion of superior tobacco (%)	Output (yuan/hm ²)	Number of Leave (piece)	Stem circumference (cm)	Plant height (cm)	Nicotine content (%)	Total sugar content (%)	Kalium content (%)	Black shank index
Planting areas in Southwest Sichuan	09011	1.000 0	0.666 4	0.915 4	1.000 0	0.954 2	0.869 0	0.649 0	1.000 0	0.610 0	0.695 8
	X3	0.890 4	0.637 0	0.851 9	0.926 1	0.962 5	0.922 6	0.838 0	0.741 6	0.850 0	0.464 8
	X4	0.864 9	0.725 7	0.875 7	0.907 7	1.000 0	0.915 6	0.946 0	0.883 0	0.766 0	0.480 2
	SCT01	0.930 8	0.871 8	1.000 0	0.960 4	0.966 7	0.943 4	1.000 0	1.000 0	0.844 0	0.775 2
	k326	0.900 3	0.744 8	0.906 6	0.986 8	0.866 7	1.000 0	0.910 0	1.000 0	0.688 0	0.807 7
	Yunyan87	0.861 4	0.848 6	0.979 4	0.923 5	0.8375	0.941 2	1.000 0	1.000 0	0.712 0	1.000 0
Hongda	0.789 0	1.000 0	0.922 7	0.775 7	0.950 0	0.940 4	1.000 0	1.000 0	0.994 0	0.592 3	
Planting areas in South Sichuan	09011	1.000 0	0.905 8	0.989 6	0.982 1	0.946 6	0.788 7	0.568 0	1.000 0	0.688 0	0.276 6
	X3	0.924 6	0.770 2	0.792 5	1.000 0	1.000 0	0.850 2	0.955 0	1.000 0	1.000 0	0.138 3
	X4	0.942 0	0.740 7	0.837 7	0.875 0	0.946 6	0.916 9	0.667 0	1.000 0	0.946 0	0.149 7
	SCT01	0.959 7	0.822 1	0.916 1	0.969 4	0.961 2	0.861 9	1.000 0	1.000 0	0.826 0	0.345 1
	k326	0.987 8	0.840 2	1.000 0	0.943 9	0.917 5	0.839 5	1.000 0	1.000 0	0.970 0	1.000 0
	Yunyan87	0.854 1	1.000 0	0.924 4	0.867 3	0.941 7	1.000 0	1.000 0	0.991 0	0.880 0	0.392 0
Planting areas in North Sichuan	09011	1.000 0	0.897 8	1.000 0	1.000 0	0.953 5	0.864 8	0.901 0	1.000 0	0.688 0	1.000 0
	X3	0.986 9	0.799 0	0.889 5	0.969 3	1.000 0	0.839 7	1.000 0	0.888 1	0.826 0	0.536 1
	X4	0.831 3	0.885 1	0.791 0	0.895 7	0.953 5	1.000 0	0.676 0	1.000 0	0.874 0	0.678 0
	SCT01	0.936 7	0.876 3	0.904 6	0.993 9	0.918 6	0.904 6	1.000 0	1.000 0	0.898 0	0.436 4
	Yunyan87	0.845 4	1.000 0	0.905 4	0.993 9	0.860 5	0.813 6	1.000 0	1.000 0	0.730 0	0.836 7