Table S1 Detailed lists of crop inputs for organic and non-organic weed managements in different crop plots.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Details of Crop Inputs, amount ($ ha-1) | | | | | | |
| Content | Details | Price Schedules | H0T | H0T0 | HT | HT0 |
| Machine | Transportation organic compost “\*”“\*\*”  Transportation biogas slurry “\*”“\*\*”  Corn seeder “\*”  Wheat seeder “\*”  Combine harvester for wheat “\*”  Combine harvester for corn “\*”  Rotary tillage fare before winter crop seeding“\*” “\*\*”  Plough for summer crops “\*”“\*\*”  Solar energy light-traps depreciation costs “\*”“\*\*” | 3.23$ CAR-1 \*22.5 CAR ha-1  12.9 $ CAR-1, 9 CAR ha-1  69.2 $ ha-1  69.2 $ ha-1  184.6 $ ha-1  184.6 $ ha -1  Mechanical rotary tillage, 121.05 $ ha-1  96.84 $ ha-1  322.8 $ light-1, 1 light ha-1,  5 years for 1 light | 72,6  116,2  69,2  69.2  184,6  184,6  121,05  96,84  64,6 | 72,6  116,2  69,2  69,2  184,6  184,6  121,05  0,0  64,6 | 72,6  116,2  69,2  69,2  184,6  184,6  121,05  96,84  0,0 | 72,6  116,2  69,2  69,2  184,6  184,6  121,05  0,0  0,0 |
| Irrigation | Requirements for irrigation to government “\*” “\*\*” | 217.89 $ ha-1 | 436,0 | 436,0 | 436,0 | 436,0 |
| Labor | Composting “\*”“\*\*”  Manual weeding “\*”“\*\*”  Fertilizers application “\*”“\*\*”  Spray herbicide “\*”“\*\*”  Spray insecticide “\*”“\*\*”  Drainage “\*”“\*\*”  **Sowing**  Soybean “\*\*”  Garlic “\*\*”  **Harvesting**  Soybean “\*\*”  Garlic“\*\*”  **Irrigation**  Corn “\*”  Soybean“\*\*”  Wheat “\*”  Garlic“\*\*” | 2 labor ha-1, once a year  15 labor ha-1, four times a year  15 labor ha-1, once a year  4 labor ha-1 , four times a year  4 labor ha-1, twice a year  4 labor ha-1, once a season  15 labor ha-1, once a season  15 labor ha-1, once a season  18 labor ha-1, once a year  18 labor ha-1, once a year  9 labor ha -1 , once a quarter  9 labor ha -1, once a quarter  18 labor ha -1, twice a season  27 labor ha -1 , thrice a season | 19,4  145,2  145,3  0,0  0,0  43,6  174,3  174,3  173,3  173,3  23,1  23,1  46,2  69,2 | 19,4  145,2  145,3  0,0  0,0  43,6  174,3  174,3  173,3  173,3  23,1  23,1  46,2  69,2 | 19,4  0,0  145,3  72,6  43,6  43,6  174,3  174,3  173,3  173,3  23,1  23,1  46,2  69,2 | 19,4  0,0  145,3  72,6  43,6  43,6  174,3  174,3  173,3  173,3  23,1  23,1  46,2  69,2 |
| Fertilizer | Organic fertilizers “\*”“\*\*”  Biogas slurry “\*”“\*\*” | 7.5 t/ ha-1, 4.84$ m-1  60 cube ha-, 2.98$ m-3 | 363,2  179 | 363,2  179 | 363,2  179 | 363,2  179 |
| Herbicide | Paraquat for wheat and garlic “\*”“\*\*”  Acetochlor for maize and soybean “\*”“\*\*” | 15 bottle ha-1, 1.6 $ bottle-1,  24.21 $ ha-1 | 0,0 | 0,0 | 24,2 | 24,2 |
| Pesticide | Phoxim for wheat and garlic “\*”“\*\*”  Imidacloprid for corn and soybean “\*”“\*\*” | 15 bottle ha-1, 1.6 $ bottle-1,  24.21 $ ha-1 | 0,0 | 0,0 | 24,2 | 24,2 |
| Seeds | Corn “\*”  Wheat “\*”  Soybean“\*\*”  Garlic“\*\*” | 0.48 $ kg-1, 225 kg ha-1  3.23 $ kg-1, 30 kg ha-1  0.69 $ kg-1, 45 kg ha-1  1.19 $ kg-1, 1500 kg ha-1 | 109,0  96,8  30,9  1785,0 | 109,0  96,8  30,9  1785,0 | 109,0  96,8  30,9  1785,0 | 109,0  96,8  30,9  1785,0 |
| Sum | Wheat and maize rotation system (WM) |  | 2585,69 | 2488,85 | 2605,09 | 2508,25 |
| Garlic and soybean rotation system (GS) |  | 4407,39 | 4309,55 | 4425,79 | 4328,95 |

“\*” represents wheat and maize crop rotation system management.

“\*\*” represents garlic and soybean crop rotation system management.