**永优玉米数据库设计**

# 1、数据库设计

|  |  |  |  |
| --- | --- | --- | --- |
| 序号 | 表 | 名称 | 说明 |
| T01 | Region | 区域 |  |
| T02 | Crop | 作物 |  |
| T03 | CropCultivar | 作物品种 |  |
| T04 | CropGrwp | 作物发育期 | Crop Growth Period |
| T05 | CropParameter | 作物参数 |  |
| T06 | CropWorkspace | 作物工作空间 |  |
| T07 | Station | 站点 |  |
| T10 | SensitiveFactors | 敏感因子（SF） |  |
| T11 | SF\_Period | SF周期 |  |
| T12 | SF\_S | SF日照 |  |
| T13 | SF\_Tavg | SF平均温度 |  |
| T14 | SF\_Tmax | SF最高温度 |  |
| T15 | SF\_Tmin | SF最低温度 |  |
| T16 | SF\_U | SF相对湿度 |  |
| T17 | SF\_All | SF所有敏感因子 |  |

# 2、数据表设计

## T01. Region

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 序号 | 字段 | 类型 | 大小 | PK | FK | 不允许NULL | 备注 |
| 01 | RgnID | varchar | 16 |  |  |  | 区域ID |
| 02 | RgnCode | varchar | 32 |  |  |  | 区域代码 |
| 03 | RgnName | varchar | 32 |  |  |  | 区域名称 |
| 04 | XClipMin | Float | 4 |  |  |  | 剪切区X最小值 |
| 05 | XClipMax | Float | 4 |  |  |  | 剪切区X最大值 |
| 06 | YClipMin | Float | 4 |  |  |  | 剪切区Y最小值 |
| 07 | YClipMax | Float | 4 |  |  |  | 剪切区Y最大值 |
| 08 | Cmin | Float | 4 |  |  |  | 历年适宜度最小值平均 |
| 09 | Cmax | Float | 4 |  |  |  | 历年适宜度最大值平均 |
| 10 | PalCode | Int | 4 |  |  |  | 调色板代码 |
| 11 | Remark | varchar | 128 |  |  |  | 备注 |

## T02. Crop

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 序号 | 字段 | 类型 | 大小 | PK | FK | 不允许NULL | 备注 |
| 01 | CropID | varchar | 16 |  |  |  | 作物ID |
| 02 | CropCode | varchar | 32 |  |  |  | 作物代码 |
| 03 | CropName | varchar | 32 |  |  |  | 作物名称 |
| 04 | Remark | varchar | 128 |  |  |  | 备注 |

## T03. CropCultivar

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 序号 | 字段 | 类型 | 大小 | PK | FK | 不允许NULL | 备注 |
| 01 | CropID | varchar | 16 |  |  |  | 作物ID |
| 02 | CultivarID | varchar | 16 |  |  |  | 发育期ID |
| 03 | CultivarCode | varchar | 32 |  |  |  | 发育期代码 |
| 04 | CultivarName | varchar | 32 |  |  |  | 发育期名称 |
| 05 | Remark | varchar | 128 |  |  |  | 备注 |

## T04. CropGrwp

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 序号 | 字段 | 类型 | 大小 | PK | FK | 不允许NULL | 备注 |
| 01 | CropID | varchar | 16 |  |  |  | 作物ID |
| 02 | GrwpID | varchar | 16 |  |  |  | 发育期ID |
| 03 | GrwpCode | varchar | 32 |  |  |  | 发育期代码 |
| 04 | GrwpName | varchar | 32 |  |  |  | 发育期名称 |
| 05 | GrwpSpan | varchar | 16 |  |  |  | 发育期跨度【1】 |
| 06 | Remark | varchar | 128 |  |  |  | 备注 |

【注1】

* 发育期跨度格式：mm.dd-mm.dd
* 发育期跨度发育期跨度定义主要在CropWorkspace中，可以区分不同区域

## T05. CropParameter（待设计）

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 序号 | 字段 | 类型 | 大小 | PK | FK | 不允许NULL | 备注 |
| 01 | CropID | varchar | 16 |  |  |  | 作物ID |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |

## T06. CropWorkspace

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 序号 | 字段 | 类型 | 大小 | PK | FK | 不允许NULL | 备注 |
| 01 | RgnID | varchar | 16 |  |  |  | 区域ID |
| 02 | CropID | varchar | 16 |  |  |  | 作物ID |
| 03 | CultivarID | varchar | 16 |  |  |  | 品种ID |
| 04 | GrwpID | varchar | 16 |  |  |  | 发育期ID |
| 05 | GrwpName | varchar | 32 |  |  |  | 发育期名称 |
| 06 | GrwpSpan | varchar | 16 |  |  |  | 发育期跨度 |
| 07 | thrRain | varchar | 32 |  |  |  | 降水阈值：R0 |
| 08 | thrSunlight | varchar | 32 |  |  |  | 光照阈值：S0 |
| 09 | thrTemperature | varchar | 32 |  |  |  | 温度阈值：T0-TL-TH  【注1】 |
| 10 | Weight01 | single | F4 |  |  |  | 发育阶段权重 |
| 11 | Remark | varchar | 128 |  |  |  | 备注 |
|  |  |  |  |  |  |  |  |

【注1】温度阈值：格式为T0-TL-TH，其中T0、TL、TH分别为适宜气温、最低气温和最高气温。

## T07. Station

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 序号 | 字段 | 类型 | 大小 | PK | FK | 不允许NULL | 备注 |
| 01 | StationID | varchar | 16 |  |  |  | 站点ID |
| 02 | StationName | varchar | 32 |  |  |  | 站点名称 |
| 03 | Lon |  |  |  |  |  | 经度 |
| 04 | Lat |  |  |  |  |  | 纬度 |
| 05 | Alt |  |  |  |  |  | 海拔 |
| 06 | RgnID |  |  |  |  |  | 区域ID |
| 07 | RegionID |  |  |  |  |  | 区域组合ID |
| 08 | Remark | varchar | 128 |  |  |  | 备注 |

## T10. SensitiveFactors

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 序号 | 字段 | 类型 | 大小 | PK | FK | 不允许NULL | 备注 |
| 01 | ID | varchar | 32 |  |  |  |  |
| 02 | Code | varchar | 64 |  |  |  |  |
| 03 | Name | varchar | 64 |  |  |  |  |
| 04 | Remark | varchar | 128 |  |  |  |  |

## T11. SF\_Period

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 序号 | 字段 | 类型 | 大小 | PK | FK | 不允许NULL | 备注 |
| 01 | ID | varchar | 32 |  |  |  |  |
| 02 | Code | varchar | 64 |  |  |  |  |
| 03 | Name | varchar | 64 |  |  |  |  |
| 04 | Remark | varchar | 128 |  |  |  |  |
|  |  |  |  |  |  |  |  |

## T12. SF\_S

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 序号 | 字段 | 类型 | 大小 | PK | FK | 不允许NULL | 备注 |
| 01 | SFID | varchar | 32 |  |  |  | 敏感因子ID |
| 02 | CultivarID | varchar | 32 |  |  |  | 作物品种ID |
| 03 | PeriodID | varchar | 32 |  |  |  | 周期ID |
| 04 | A\_MIN | float | 4 |  |  |  | A值区间最小值 |
| 05 | A\_MAX | float | 4 |  |  |  | A值区间最大值 |
| 06 | B\_MIN | float | 4 |  |  |  | B值区间最小值 |
| 07 | B\_MAX | float | 4 |  |  |  | B值区间最大值 |
| 08 | WGT | float | 4 |  |  |  | 权重 |
| 09 | FLAG | varchar | 32 |  |  |  | 标志。Yes表示可用 |
| 10 | Remark | varchar | 128 |  |  |  |  |

## T13. SF\_Tavg

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 序号 | 字段 | 类型 | 大小 | PK | FK | 不允许NULL | 备注 |
| 01 | SFID | varchar | 32 |  |  |  | 敏感因子ID |
| 02 | CultivarID | varchar | 32 |  |  |  | 作物品种ID |
| 03 | PeriodID | varchar | 32 |  |  |  | 周期ID |
| 04 | A\_MIN | float | 4 |  |  |  | A值区间最小值 |
| 05 | A\_MAX | float | 4 |  |  |  | A值区间最大值 |
| 06 | B\_MIN | float | 4 |  |  |  | B值区间最小值 |
| 07 | B\_MAX | float | 4 |  |  |  | B值区间最大值 |
| 08 | WGT | float | 4 |  |  |  | 权重 |
| 09 | FLAG | varchar | 32 |  |  |  | 标志。Yes表示可用 |
| 10 | Remark | varchar | 128 |  |  |  |  |

## T14. SF\_Tmax

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 序号 | 字段 | 类型 | 大小 | PK | FK | 不允许NULL | 备注 |
| 01 | SFID | varchar | 32 |  |  |  | 敏感因子ID |
| 02 | CultivarID | varchar | 32 |  |  |  | 作物品种ID |
| 03 | PeriodID | varchar | 32 |  |  |  | 周期ID |
| 04 | A\_MIN | float | 4 |  |  |  | A值区间最小值 |
| 05 | A\_MAX | float | 4 |  |  |  | A值区间最大值 |
| 06 | B\_MIN | float | 4 |  |  |  | B值区间最小值 |
| 07 | B\_MAX | float | 4 |  |  |  | B值区间最大值 |
| 08 | WGT | float | 4 |  |  |  | 权重 |
| 09 | FLAG | varchar | 32 |  |  |  | 标志。Yes表示可用 |
| 10 | Remark | varchar | 128 |  |  |  |  |

## T15. SF\_Tmin

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 序号 | 字段 | 类型 | 大小 | PK | FK | 不允许NULL | 备注 |
| 01 | SFID | varchar | 32 |  |  |  | 敏感因子ID |
| 02 | CultivarID | varchar | 32 |  |  |  | 作物品种ID |
| 03 | PeriodID | varchar | 32 |  |  |  | 周期ID |
| 04 | A\_MIN | float | 4 |  |  |  | A值区间最小值 |
| 05 | A\_MAX | float | 4 |  |  |  | A值区间最大值 |
| 06 | B\_MIN | float | 4 |  |  |  | B值区间最小值 |
| 07 | B\_MAX | float | 4 |  |  |  | B值区间最大值 |
| 08 | WGT | float | 4 |  |  |  | 权重 |
| 09 | FLAG | varchar | 32 |  |  |  | 标志。Yes表示可用 |
| 10 | Remark | varchar | 128 |  |  |  |  |

## T16. SF\_U

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 序号 | 字段 | 类型 | 大小 | PK | FK | 不允许NULL | 备注 |
| 01 | SFID | varchar | 32 |  |  |  | 敏感因子ID |
| 02 | CultivarID | varchar | 32 |  |  |  | 作物品种ID |
| 03 | PeriodID | varchar | 32 |  |  |  | 周期ID |
| 04 | A\_MIN | float | 4 |  |  |  | A值区间最小值 |
| 05 | A\_MAX | float | 4 |  |  |  | A值区间最大值 |
| 06 | B\_MIN | float | 4 |  |  |  | B值区间最小值 |
| 07 | B\_MAX | float | 4 |  |  |  | B值区间最大值 |
| 08 | WGT | float | 4 |  |  |  | 权重 |
| 09 | FLAG | varchar | 32 |  |  |  | 标志。Yes表示可用 |
| 10 | Remark | varchar | 128 |  |  |  |  |

## T17. SF\_All

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 序号 | 字段 | 类型 | 大小 | PK | FK | 不允许NULL | 备注 |
| 01 | SFID | varchar | 32 |  |  |  | 敏感因子ID |
| 02 | CultivarID | varchar | 32 |  |  |  | 作物品种ID |
| 03 | PeriodID | varchar | 32 |  |  |  | 周期ID |
| 04 | A\_MIN | float | 4 |  |  |  | A值区间最小值 |
| 05 | A\_MAX | float | 4 |  |  |  | A值区间最大值 |
| 06 | B\_MIN | float | 4 |  |  |  | B值区间最小值 |
| 07 | B\_MAX | float | 4 |  |  |  | B值区间最大值 |
| 08 | WGT | float | 4 |  |  |  | 权重 |
| 09 | FLAG | varchar | 32 |  |  |  | 标志。Yes表示可用 |
| 10 | Remark | varchar | 128 |  |  |  |  |

# 3、存储过程设计

## S01. sp\_Crop

|  |  |  |
| --- | --- | --- |
| 序号 | 名称 |  |
| 1 | sp\_Crop | SELECT Crop.CropID, Crop.CropCode, Crop.CropName, Crop.Remark  FROM Crop  ORDER BY Crop.CropID; |
|  |  |  |