|  |  |  |  |
| --- | --- | --- | --- |
| Supplementary Table: Zadoks Scale, a Decimal code used to quantify the growth stages in cereals (Zadoks *et al.,* 1974) | | | |
| **Code** | **Description** | **Code** | **Description** |
|  |  |  |  |
| **0** | **GERMINATION** |  |  |
| 00 | Dry seed |  |  |
| 01 | Start of imbibition |  |  |
| 02 | Imbibition complete |  |  |
| 03 | Radicle emerged from seed |  |  |
| 04 | Coleoptile emerged from seed | **4** | **BOOTING** |
| 05 | Leaf just at coleoptile tip | 41 | Flag leaf sheath extending |
| **1** | **SEEDLING GROWTH** | 43 | Boots just visible and swollen |
| 10 | First leaf through coleoptile | 45 | Boots swollen |
| 11 | 1 leaf unfolded | 47 | Flag leaf sheath opening |
| 12 | 2 leaves unfolded | 49 | First awns visible |
| 13 | 3 leaves unfolded | **5** | **EAR EMERGENCE** |
| 14 | 4 leaves unfolded | 51 | First spikelet of ear just visible |
| 15 | 5 leaves unfolded | 53 | One-fourth of ear visible |
| 16 | 6 leaves unfolded | 55 | One-half of ear emerged |
| 17 | 7 leaves unfolded | 57 | Three-fourths of ear emerged |
| 18 | 8 leaves unfolded | 59 | Emergence of ear complete |
| 19 | 9 leaves or more unfolded | **6** | **FLOWERING** |
| **2** | **TILLERING** | 61 | Beginning of flowering |
| 20 | Main shoot only | 65 | Flowering half-way complete |
| 21 | Main shoot and 1 tiller | 69 | Flowering complete |
| 22 | Main shoot and 2 tillers | **7** | **MILK DEVELOPMENT** |
| 23 | Main shoot and 3 tillers | 71 | Seed water ripe |
| 24 | Main shoot and 4 tillers | 73 | Early milkb |
| 25 | Main shoot and 5 tillers | 75 | Medium milk |
| 26 | Main shoot and 6 tillers | 77 | Late milk |
| 27 | Main shoot and 7 tillers | **8** | **DOUGH DEVELOPMENT** |
| 28 | Main shoot and 8 tillers | 83 | Early dough (fingernail impression not held) |
| 29 | Main shoot and 9 or more tillers | 85 | Soft doughc |
| **3** | **STEM ELONGATION** | 87 | Hard dough |
| 30 | Pseudo-stem erectiona | **9** | **RIPENING** |
| 31 | 1st node detectable | 91 | Seed hard (difficult to divide with thumbnail) |
| 32 | 2nd node detectable | 92 | Seed hard (cannot dent with thumbnail) |
| 33 | 3rd node detectable | 93 | Seed loosening in daytime |
| 34 | 4\* node detectable | 94 | Seed over-ripe; straw dead and collapsing |
| 35 | 5th node detectable | 95 | Seed dormant |
| 36 | 6th node detectable | 96 | Viable seed giving 50% germination |
| 37 | Flag leaf just visible | 97 | Seed not dormant |
| 38 | Flag leaf ligule just visible | 98 | Secondary dormancy induced |
| 39 | Flag leaf ligule just visible | 99 | Secondary dormancy lost |