

Wheat (*Triticum aestivum*)

Varieties:

Varieties	Year of release	Duration (days)		Yield (q/ha)	
		Rainfed	Irrigated	Rainfed	Irrigated
Sonalika	1967	102-107	115-120	18-20	30-35
UP 262	1977	106-111	120-125	19-25	30-35
HDR-77	1999	110-115	-	20-22	-

New varieties recommended

Varieties	Year of release	Sowing time	Duration (days)	Grain yield (q/ha)	*Agroclimatic zone	Pest reaction
DBW-14	2003	Nov 5- Dec 15	100-105 (irrigated condition)	30-35	All zones except B & H	Tolerant to Leaf blight, Insect attack negligible
HUW-468	1997	Nov 5- Dec 15	105-110 (irrigated condition)	25-30	All zones except B & H	Tolerant to Leaf blight, Insect attack negligible

Refer to page iii for full forms of the abbreviations

Newly Recommended variety:

HD2967 (Year of release: 2014) (Adaptation: CBVZ, LBVZ, NBPZ)

DBW39 (Year of release: 2010)

Soil:

Sandy loam to silty loam soils, rich in organic matter are suitable. Clayey soil is not suitable for wheat.

Field preparation:

The land is to be ploughed thoroughly and leveled properly. The first ploughing is done preferably about one month ahead of sowing. Four to five ploughings followed by laddering are required to obtain a good tilth.

Rotary Tillage with Rotavator and Reduced tillage (2-3 ploughings followed by laddering) can be used profitably for wheat cultivation in rice-wheat system.

In rice-wheat cropping system, zero tillage with the use of Zero-till-cum-seed- cum-fertilizer drill for sowing of wheat is recommended in light textured soil of Central Brahmaputra Valley Zone and Upper Brahmaputra Valley Zone.

Time of sowing:

Zone (Districts)	Period
Central Brahmaputra Valley Zone (Nagaon & Morigaon) and Lower Brahmaputra Valley Zone (Kamrup, Borpeta, Bongaigaon, Nalbari, Goalpara, Dhubri & Kokrajhar)	November 5 to December 15
Upper Brahmaputra Valley Zone (Sibsagar, Jorhat, Golaghat, Dibrugarh & Tinsukia) and Hills Zone (Karbi Anglong & N. C. Hills)	November 5 to 30
North Bank Plain Zone (Lakhimpur, Dhemaji, Sonitpur & Darrang)	November 5 to 20

N.B.

- i) In Sadia sub-division, middle of October is favourable time for sowing of wheat variety “Sonalika”.
- ii). The optimum time of sowing of wheat is when the mean temperature of 25°C prevails in the areas.
- iii). Growing of wheat after short duration rice is feasible in medium lowland situations. Transplanting rice in mid-July and sowing wheat in late November with full recommended dose of fertilizers for both the crops is necessary.
- iv). Early sowing helps in utilizing residual soil moisture and escaping pre-monsoon rains.

Seed treatment:

Seed priming should be done by soaking the seeds overnight before sowing, for faster emergence and uniform crop establishment. Seed treatment should be done with the following fungicides.

Fungicide	Dose/kg of seed	Diseases
Carboxin	3 g	Loose smut

Seed rate, spacing and method of sowing:

A seed rate of 100-120 kg/ha (13.34-16.0 kg/bigha) is adequate. Row to row distance of 20 cm is to be maintained for optimum plant population. Depth of sowing should be 3-5 cm but not deeper than 5 cm. After sowing the seeds in furrows, laddering should be done along the furrows followed by another laddering across the furrows. This ensures compaction resulting in uniform and quick germination. Seeds can be sown in line by ‘Pora’ ‘Kera’ or ‘Sirolua’ methods.

Surface seeding of wheat is recommended for low land rice-wheat cropping system where excessive soil wetness is the main constraint for taking another crop after harvest of rice in the Central Brahmaputra Valley Zone.

Fertility Management:

Fertilizer is to be applied in furrows at 10 cm deep, mixed and covered by 5 cm of soil. The fertilizer can also be applied by broadcasting before last ploughing and mixed thoroughly with the soil.

Under noted dosages of fertilizers are recommended sub-division wise for irrigated conditions.

District	Agril. Sub-division	Dosages (kg/ha)		
		N	P ₂ O ₅	K ₂ O
Kokrajhar	Kokrajhar	80	46	42
	Sidli	80	46	42
Dhubri	Dhubri	80	46	42
Goalpara	Goalpara	60	34	42
	Mancachar	60	34	42
Kamrup	Guwahati	45	34	42
	Rangia	80	46	42
Nalbari	Nalbari	80	46	42
Barpeta	Barpeta	80	46	42
Sonitpur	Tezpur	80	34	42
Biswanath	Biswanath	80	34	42
Darrang	Mongoldoi	60	34	46
Nagaon	Nagaon	60	45	42
Morigaon	Morigaon	60	35	42
Hojai	Hojai	60	45	42
Sivasagar	Sivasagar	60	45	42
Charaideo	Charaideo	-	-	-
Jorhat	Jorhat	80	46	42
Majuli	Majuli	60	30	20
Golaghat	Golaghat	80	46	42
	Sarupathar	80	46	42
Dibrugarh	Dibrugarh	80	46	30
Tinsukia	Tinsukia	80	34	24
Lakhimpur	Lakhimpur	80	34	12
Karbi Anglong	Karbi Anglong	80	23	36

Under irrigated condition, half of N and the whole quantity of P₂O₅ and K₂O is to be applied as basal and the remaining half of N at CRI stage just before first irrigation.

Under rainfed condition, NPK @ 40:20:20 is recommended for all the zones.

In absence of SSP, DAP can be applied in proportion to the quantities of N and P₂O₅ suggested above. Granulated mixed fertilizers can be used for basal application only.

On the basis of availability, sufficient quantities of FYM should be incorporated in the soil at the time of field preparation.

In addition to recommended dose of fertilizers, Zinc Sulphate @ 15 kg/ha (2 kg/bigha) should be applied as basal

For higher yield of wheat, seed should be treated with *Azotobacter* and PSB (20g each/kg seed), in addition to recommended dose of inorganic fertilizer

Water Management

Irrigation schedule:

In case of dry top soil, pre-sowing irrigation is to be applied 3-4 days before sowing for quick and uniform germination of seeds.

Two irrigations of 6 cm depth have been recommended for all the agro-climatic zones. The first irrigation has to be applied at the CRI stage (20-25 days after sowing) of the crop and the second one at the heading stage (70-75 days after sowing). Irrigation should be avoided when the ground water table remains within 50 cm of the root zone.

Mulching:

Rice straw mulching with 3 irrigations of 6 cm depth each at CRI stage (20-25 DAS), Booting stage (60-65 DAS) and milk stage (90-95 DAS) increases the grain yield of wheat with higher monetary return in rice wheat system

Weed management:

Weeding is to be done when plants attain 4-5 leaf stage. Post emergence application (30-35 days after sowing) of isoproturon @ 1.00 kg a.i./ha + metsulfuron methy @ 14.00g/ha in 700 litres of water controls weeds effectively. Running twin wheel hoes in between rows once at 20 days after seeding controls weed effectively.

Pre-harvest sprouting management

To prevent pre-harvest sprouting in wheat, spray 7.5% NaCl (Common salt) or 0.015 % (150 ppm) Sodium Molybdate at milk and maturity stage.

Plant protection:

Pesticides/Operation/ Disease	Dose/ha	Conc.(%)	Time of application	Insect/pests
Rouging of affected plants	-	-	As soon as noticed	Loose smut
Thiamethoxam 25 WG	12.5 g a.i./ha or 100g/ha or 0.3g/lit	-	As soon as noticed	Aphid Cricket, mole cricket, red ant, white ant
Zinc phosphide poison bait	-	Apply in bait stations	Rat	

Bait composition:

<i>Atta</i> /crushed maize	: 80 g
<i>Gur</i>	: 10 g
Dry fish or fried fish	: 5 g
Zinc phosphide	: 5 g

N.B.: Micronutrient preparations should be applied as foliar spray when micronutrient deficiency is suspected.

Harvesting:

Wheat is to be harvested during sunny days as soon as it matures. The mature grain produces a cracking sound when passed between teeth.

Storage:

Steps for storage of wheat for seed purpose are as follows:

1. Seeds should be collected from disease free fields.
2. Wet seeds should not be kept for seed purpose.
3. Seeds must be dried for 4 to 6 days or more to bring the moisture content below 12 per cent.
4. Seeds can be preserved in sealed thick polythene bags or in tightly closed metallic containers or '*Juria duli*'. When stored in '*Juria duli*' or metallic bin.
5. Seeds should be examined periodically and if necessary it should be dried and repacked.

Protection of wheat seeds from insect pests during storage with the following practices:

- Dry the wheat seeds to reduce moisture content up to 11-12%
- Mix black peeper seed powder @ 6 g / kg seed thoroughly
- Store in gunny bags impregnated with polyethene in dry places