Table S3. Properties of the input vectors $\mathbf{x}_p^1$ for layer 1 and $\mathbf{x}_p^2$ for layer 2 at a given position p are shown. $\Sigma = \{A, C, G, T\}$ denotes the DNA alphabet, the strands are represented by $s \in \{+,-\}$, τ is either target t or reference variety *ref*. Unless defined otherwise, $\Delta p \in \{-4, \dots ,4\}$.

	Formula	Description	Size
I_{max}	$I_{\max}^p(\Delta p, \tau, s) = \max_{\sigma \in \Sigma} \log\left(I_{\tau,s}(p+\Delta p, \sigma)\right)$	Maximal intensities for target and reference variety, strand-wise in a 9 bp window	36
I_{sec}	$I_{\sec}^p(\Delta p, \tau, s) = \text{mean}_{\sigma \neq \sigma_{max}} \log\left(I_{\tau,s}(p+\Delta p, \sigma)\right)$ where $\sigma_{max} = \arg\max_{\sigma \in \Sigma} \log\left(I_{\tau,s}(p+\Delta p, \sigma)\right)$	Average of the non-maximal intensities for target and reference variety, strand-wise in a 9 bp window	36
Q_1	$Q_1^p(\Delta p, \tau, s) = \log \dfrac{I_{\max}^p(\Delta p, \tau, s)}{I_{\max}^p(0, \tau, s)}$ where $\Delta p \in \{-4, \dots, -1, 1, \dots, 4\}$	Quotients of the maximal intensities at the neighbouring positions and p for target and reference variety, strand-wise in a 9 bp window	32
Q_2	$Q_2^p(\Delta p, s) = \log \dfrac{I_{\max}^p(\Delta p, t, s)}{I_{\max}^p(\Delta p, ref, s)}$	Quotients of the maximal intensities at p for target and reference variety, strand-wise in a 9 bp window	18
M	$M^p(\Delta p, \tau, s) = \delta\left(B_{\tau,s}(p+\Delta p), RS(p)\right)$ where $\delta(i,j) = \begin{cases} 1 & i = j \\ 0 & i \neq j \end{cases}$	Mismatches between the raw base calls of the target/reference variety and the reference sequence, strand-wise in a 9 bp window	36
RS	$RS^p(\sigma) = \delta(RS(p), \sigma)$	Binary vector indicating the presence of the base σ in the reference at p	4
f	$f^p(\sigma) = \sum_{\Delta=-13}^{\Delta=13} \delta\left(RS(p+\Delta), \sigma\right)$	Frequency of each base σ within the 25-mer	4
H	$H^p = -\sum_{\sigma \in \Sigma} f^p(\sigma) \log\left(f^p(\sigma)\right)$	Sequence entropy of the 25-mer	1
k	$k^p(\Delta p, \sigma) = \left[k_{type}^p(\Delta p, \sigma), k_{dom\,type}^p(\Delta p)\right]$ where $type \in \{exact, inexact, short, bulged\}$	Occurrence counts of repetitive 25-mers in a 9 bp window	558
v	$v^p(\gamma) = \begin{cases} 10 & \gamma = v(p) \\ 0 & \gamma \neq v(p) \end{cases}$	Vector indicating the variety origin of p	19
	$\mathbf{x}^1 = [I_{max}, I_{sec}, Q_1, Q_2, M, RS, f, H, k, v]^T$		744
b	$b^p(t) = [[c^p(t) \geq th_t]]$	Binary vector indicating whether p passed th_t for variety	361
c	$c_p(t)$	Confidences at p for all varieties	361
ind	$ind^p = \begin{cases} +1 & RS_{jap} \neq RS_{ind} \\ -1 & RS_{jap} = RS_{ind} \end{cases}$	Known polymorphism in the *ssp. indica* genome	2
	$\mathbf{x}^2 = [I_{max}, I_{sec}, Q_1, Q_2, M, RS, f, H, k, b, c, ind]^T$		1,449