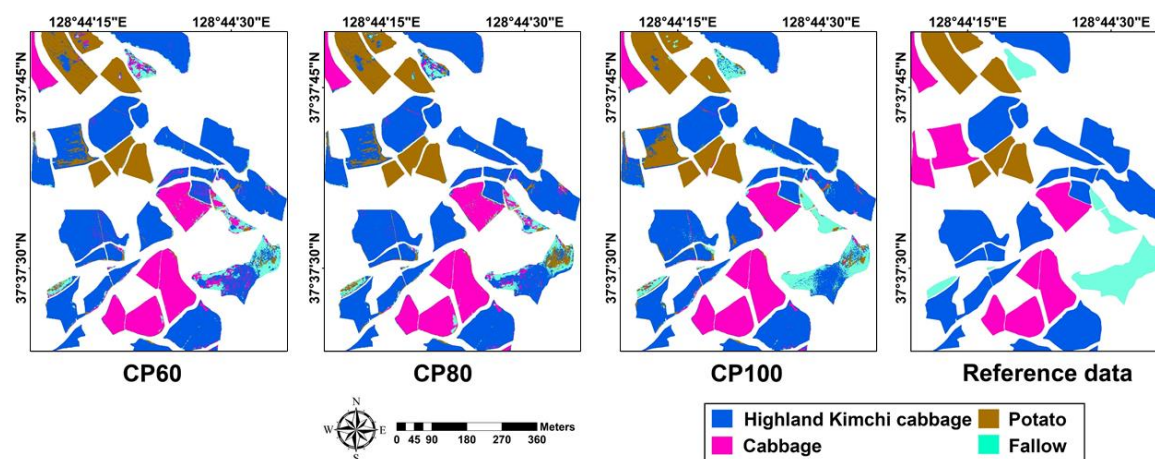
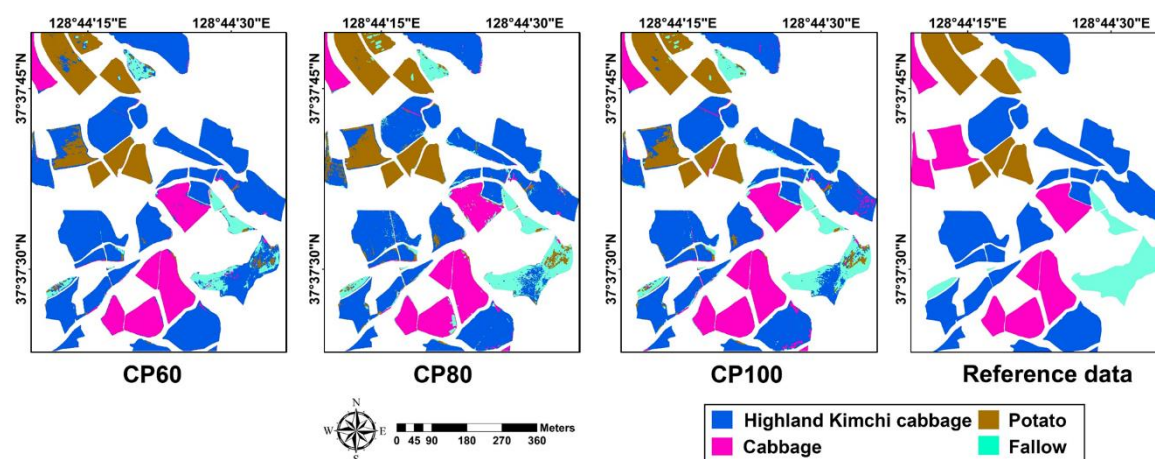


Effects of Class Purity of Training Patch on Classification Performance of Crop Classification with Convolutional Neural Network

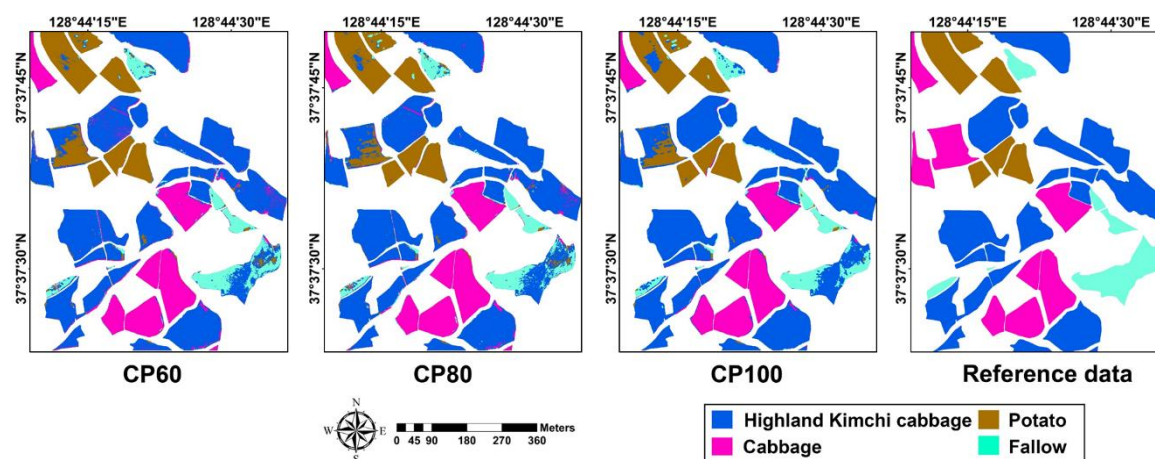
Soyeon Park and No-Wook Park *



(a)



(b)



(c)

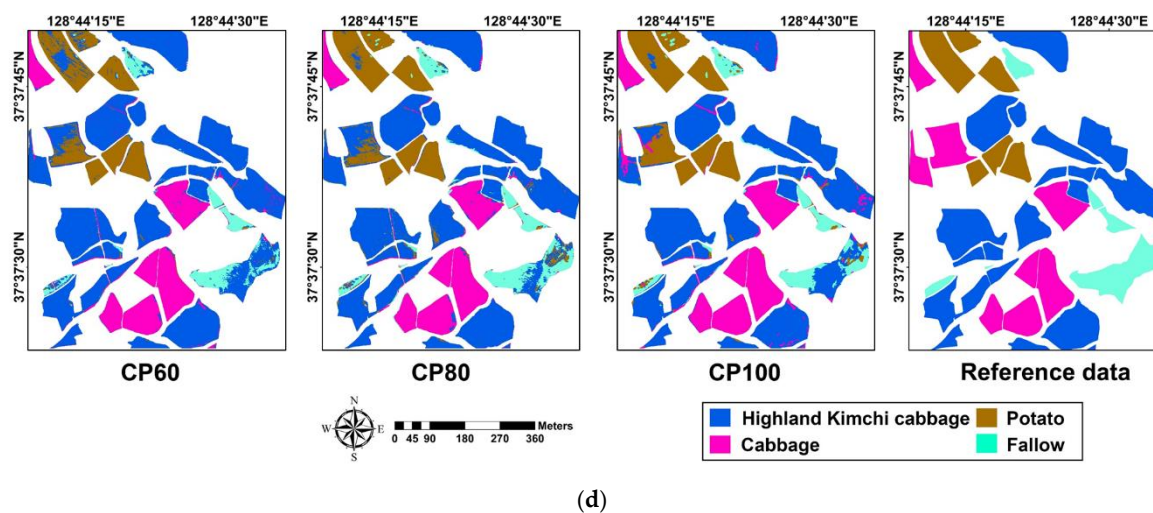
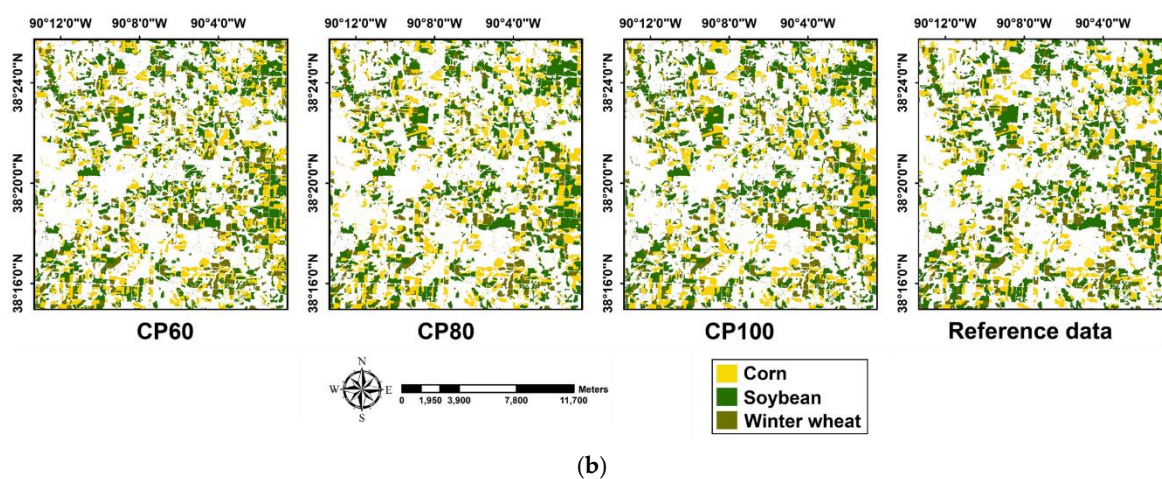
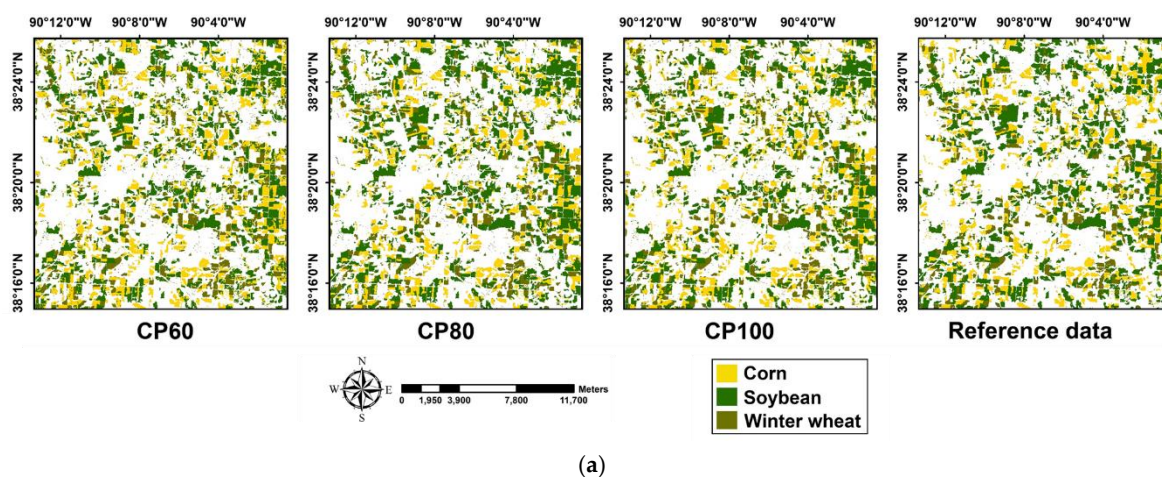


Figure S1. Classification results generated using other patch sizes and different class purity values in Anbandegi: (a) 5 by 5 patch; (b) 13 by 13 patch, (c) 15 by 15 patch; and (d) 21 by 21 patch. Each map is one of four classification results with the highest overall accuracy.



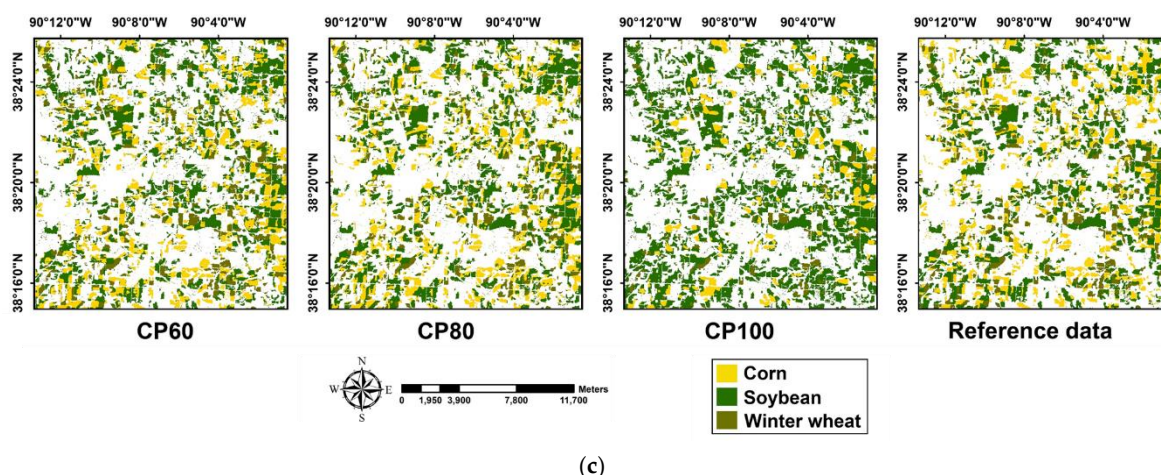


Figure S2. Classification results generated using other patch sizes and different class purity values in Illinois: (a) 5 by 5 patch; (b) 9 by 9 patch; and (c) 15 by 15 patch. Each map is one of four classification results with the highest overall accuracy.

Table S1. Accuracy statistics of the classification results using other patch sizes and different class purity values in Anbandegi (PA: producer's accuracy; UA: user's accuracy; OA: overall accuracy). Classification accuracy values from one of four classification results with the highest overall accuracy are displayed.

5 by 5 patch	CP60		CP80		CP100	
	PA (%)	UA (%)	PA (%)	UA (%)	PA (%)	UA (%)
Highland Kimchi cabbage	93.39	83.14	95.36	82.37	93.67	87.84
Cabbage	71.37	82.56	70.39	88.49	72.15	94.40
Potato	92.43	83.99	94.82	78.78	96.97	73.07
Fallow	41.62	70.65	33.18	74.34	60.76	77.18
OA (%)	82.35		82.54		85.39	
13 by 13 patch	CP60		CP80		CP100	
	PA (%)	UA (%)	PA (%)	UA (%)	PA (%)	UA (%)
Highland Kimchi cabbage	97.74	83.76	92.26	92.19	92.99	89.31
Cabbage	71.62	95.60	70.27	94.49	72.45	91.61
Potato	95.03	80.15	96.84	69.10	96.73	75.79
Fallow	48.29	91.01	76.44	72.95	72.53	79.44
OA (%)	85.71		85.90		86.36	
17 by 17 patch	CP60		CP80		CP100	
	PA (%)	UA (%)	PA (%)	UA (%)	PA (%)	UA (%)
Highland Kimchi cabbage	93.31	86.43	94.91	84.84	97.25	83.32
Cabbage	72.41	87.50	72.60	91.38	71.35	96.52
Potato	96.74	78.89	94.66	82.66	91.83	84.92
Fallow	63.54	88.56	59.44	83.77	59.03	86.06
OA (%)	85.53		85.65		86.11	
21 by 21 patch	CP60		CP80		CP100	
	PA (%)	UA (%)	PA (%)	UA (%)	PA (%)	UA (%)
Highland Kimchi cabbage	95.98	81.89	94.66	86.17	94.40	87.87
Cabbage	72.20	91.42	70.73	94.69	75.55	90.36
Potato	85.81	81.11	95.62	77.51	96.30	76.36
Fallow	53.04	91.12	68.14	85.57	58.36	85.97

OA (%)	84.17	86.16	86.21
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Table S2. Accuracy statistics of the classification results using other patch sizes and different class purity values in Illinois (PA: producer's accuracy; UA: user's accuracy; OA: overall accuracy). Classification accuracy values from one of four classification results with the highest overall accuracy are displayed.

5 by 5 patch	CP60		CP80		CP100	
	PA(%)	UA(%)	PA(%)	UA(%)	PA(%)	UA(%)
Corn	83.73	74.33	78.12	84.90	78.22	77.05
Soybean	77.49	87.91	85.54	86.15	78.16	85.60
Winter wheat	96.26	86.10	97.20	81.17	97.49	77.64
OA(%)	82.47		84.85		81.15	

15 by 15 patch	CP60		CP80		CP100	
	PA(%)	UA(%)	PA(%)	UA(%)	PA(%)	UA(%)
Corn	73.27	72.35	70.66	69.37	35.44	71.95
Soybean	78.82	80.17	79.59	78.83	90.12	60.33
Winter wheat	84.95	82.59	73.22	78.94	41.41	89.53
OA(%)	77.90		75.62		64.33	