

Nutritional Diseases of Apple and Pear						
Phenomena					Cause	Action
Only phenomena on leaves and shoots	Only observations on the leaves and shoots. No dead spots or edges in or on the leaves, but discolorations	Phenomena on all types of leaves, both young and old leaves, shortlot and longlot leaves	Leaves normal of shape	Leaves evenly yellow all over the tree. Little shoot growth. Fruits strongly colored and early ripe. Growth closed early.	N-deficiency	Fertilization. Choice and sensitivity of fertilizer depending on soil analysis report
				Leaves purple-brown in autumn, pale blue-green in summer. Little shoot growth. Fruits have a poor shelf life.	P-def.	Fertilization. Choice and sensitivity of fertilizer depending on soil analysis report
			Leaves small, narrowed, laterally folded. Narrow stripes along the side veins, yellow sections in between. Shoot growth very low. Leaves in rosette together. Fruits very small. Phenomena so local to a tree; fruits have a poor shelf life.		Zn-def.	Spraying with Zinc sulphate: 5% zinc sulphate for bud development or 1.% Zinc sulphate + 0.75% lime after flowering. Sowing with green manure: lucerne
		Symptoms only on certain leaves	Discoloration only on the top leaves of the langlot. Yellow leaves with a thin pattern of green veins. Leaves normal in size. In severe cases, entire tree yellow.		Fe-def.	Fertilization with organic matter. Injecting of iron citrate in the stem, spraying with iron-containing compounds
			Discoloration of the leaves only at the shortlot and the base of the langlot. Wide strips of green along the veins. Yellow in between. Leaves normal in size. Shoot growth weakens in severe cases		Mn-def.	Spraying with 5% Manganese sulphate before bud development or with 0.2% Manganese sulphate after flowering or with 1% MnSO4 + 0.5% lime after flowering
	Dead spots or edges in or on the leaves, whether or not accompanied by leaf fall, sometimes also discoloration rings	Only death of the leaves, no leaf fall	Good growth in the growing season. In early summer dead edges on the leaves. Edges curl up especially to shortlot and base of longlot		K-def.	Fertilization. Choice and quantity depending on advice based on soil analysis report
			Poor growth, death of branches, yellow and dead edges on the leaves		Cl excess	Waiting for leaching to take place. Fertilization with plaster.
		Both dead edges or spots on the leaves, as well as leaf fall, sometimes also discolorations (yellow and red)	Leaf fall at the base of the langlot. Death of the leaves varying near the varieties of apple and pear. a. Dead spots regularly between the veins (apple and pear) b. Dead edges where the death also penetrates between the veins (apple and pear) c. Yellow bands along the edge of the leaf with subsequent edge dies. Sometimes with red color between green center and yellow border (apple)		Mg-def.	Fertilization with Magnesium sulphate (500 kg/ha) or with Kieserite (300-400 kg/ha). Spraying with 2% Magnesium sulphate after flowering 4-6 times with 10 days in between
			Leaf fall at the top of the langlot. Top of the langlot dies in. Leaves show die-off from the top. Re-sprout of the shoot below the leaf fall.		Cu-def.	Fertilization with copper sulphate 50-100 kg/ha or with copper-slag flower 400-500 kg/ha
Phenomena on the fruits	Fruits strongly colored, early ripe and small in size				N-def.	Fertilization according to advice in soil analysis report
	Fruits have a poor shelf life, a lot of rotting				P-def.	Fertilization according to advice in soil analysis report
	Dot in the fruits just below the skin, sometimes dead spots in the skin, often sunken spots				N excess	Reduce nitrogen fertilization, ensure good water management, organic fertilization, combat magnesium deficiency, reduce pruning, cool fruits quickly
Phenomena on the branches	Thin and limp wood, strong branching, stocky growth, leaf marks closed open to the end of the shoot				Zn-def.	See above
	Small bumps on the bark, which when cut show brown spot, especially on pears				B-def.	This may be a matter of rootstock to be vigilant or of incompatibility. Sometimes also occurs with stoniness.
	Reddish-brown color of the bark in winter				N-def.	See above
	Death of the ends of the annual wood in winter				Cu-def.	See above